THE LEBRET SITE

A Thesis

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in the

Department of Anthropology and Archaeology

by

Brian J. Smith
Saskatoon, Saskatchewan

This thesis is dedicated to two special people,

Miss Ann M. Childs and **Miss Janet A. Zinger,**

Without them at Artifact Fest, this work would never be.

ABSTRACT

The results of the archaeological investigation of the Lebret site (EeMw-26) in the Qu'Appelle River Valley of the southeastern Saskatchewan Parklands describe and interpret the prehistoric utilization of the Fishing Lakes area for the past 3000 years. The 1984 and 1985 excavations provide a culture history for this region. Archaeological complexes include two Middle Plains Indian Period occupations: one an unidentified occupation, and the other a Sandy Creek occupation. Several Late Plains Indian Period occupations including Avonlea, Prairie Side-Notched, Late Plains or Prairie Side-Notched (including the presence of Blackduck), and a Late Plains-Fall River occupation are present.

The Lebret site operated as a fishery where the same pattern of resource exploitation was undertaken during the spring and early summer of the year for the entire length of the culture history represented.

An extensive review of historical and ethnographic literature has provided evidence that fishing was a seasonal occurrence for some bands of Northern Plains Grassland-oriented peoples who spent the winter, spring and early summer in the Parklands. It is suggested that the abundant fish resources, as well as the large variety of mammal and bird species present in the immediate environs of the Lebret site, allowed regional band groups to inhabit this base camp for several weeks or even months during the spring. The time

spent there enabled these people to prepare for the upcoming summer bison hunts.

It is suggested that fishing was not an activity practiced by all northern Grasslands peoples, but fish were exploited by some bands utilizing the resources of a particular regional habitat. In order to better understand and interpret the use of regional habitats by band level groups, it is recommended that archaeologists adopt an environmentally-sensitive regional approach as an aid in interpreting variations in Parkland archaeological assemblages.

ACKNOWLEDGEMENTS

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1.0 INTRODUCTION

Archaeological materials were first discovered at the Lebret site (EeMw-26) in the Qu'Appelle Valley near Lebret, Saskatchewan (Figure 1.1), in June, 1984 by archaeological personnel from the Archaeological Resource Management Section of Saskatchewan Culture and Recreation. This field crew discovered the site during an excavation of a cottage basement on the present LaRocque Estates development, a recently sub-divided property that was being sold for summer cottage lots. The crew noticed a wealth of archaeological material in the backdirt around the basement excavation. The Lebret site was first recorded at this time, and some artifacts were also collected in an uncontrolled manner from the backdirt piles. As well, surface investigation of road cuts in the LaRocque Estates properties at this time revealed an extensive archaeological site on the property.

In the same year, the Rural Municipality of North Qu'Appelle #187 proposed the construction of a resort road from Highway No. 56, on the east limit of the village of Lebret, Saskatchewan, to a point above the south slope of the Qu'Appelle River Valley. This road was to extend south from the village, crossing the Qu'Appelle River at an existing bridge, and proceed in a southeastern direction up slope and then west to a road allowance between Sections 35 and 36, Township 20, Range 13 West of the 2nd Meridian.

The R.M. of North Qu'Appelle retained Dr. Ernest G.

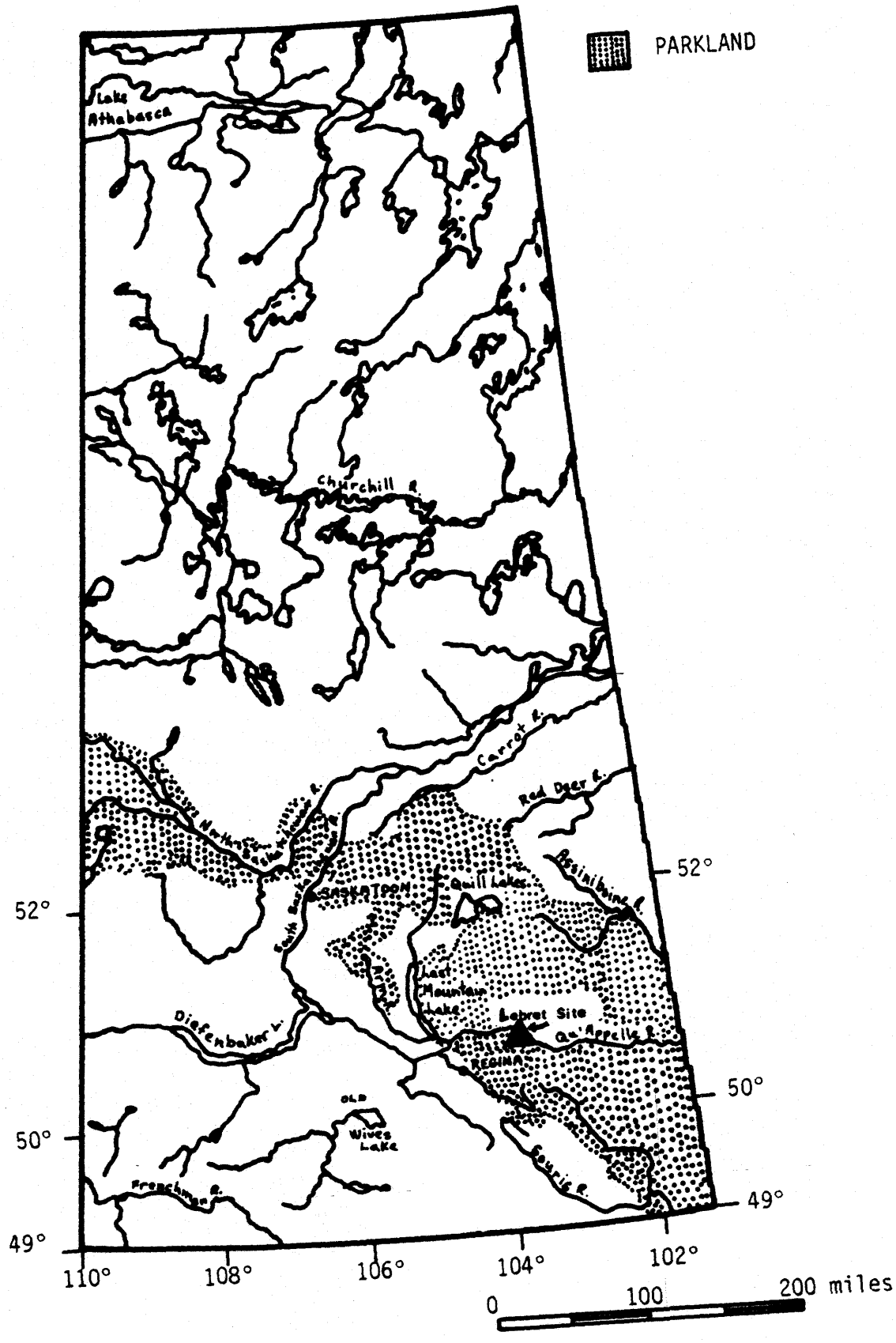


Figure 1.1: Location of the Lebret site on the Qu'Appelle River in southeastern Saskatchewan.

Walker and the author to conduct an archaeological impact assessment of a portion of the proposed right-of-way at the base of the south slope of the Qu'Appelle Valley. This impact assessment was deemed necessary based on the initial discoveries made by the Archaeological Resource Management Section crew during the previous June on the adjacent LaRocque Estates properties. It was assumed that similar concentrations of archaeological materials would be subject to impact during widening and re-aligning of the valley road, and that any materials present were to be salvaged prior to construction which was to initially start in early October, 1984. The right-of-way was tested during the periods of September 15-16 and September 22-23, 1984. This testing resulted in a report (Walker and Smith 1985) that outlined the location and contents of the Lebret site.

In the spring of 1985, the proposed road construction from Highway 56 had not yet proceeded to the point where the major excavation units (reported in Walker and Smith 1985) in Excavation Area A at the Lebret site were covered. During the last two weeks in April, 1985, the author returned to the excavation units in Area A for several days and enlarged the excavations to expand the data sample from the fall of 1984. The 2.5 square meter block excavated in 1984 was expanded to 7.5 square meters in 1985. Road construction finally proceeded to the point where further work in Area A was impossible and Area A excavation units were covered during

the first week of July, 1985.

The author returned on June 26, 1985 to test and begin exploratory excavations of the Lebret site Area B, located in the LaRocque Estates area (LSD NW 1/4 of 36-20-13-2). During the period of June 29, 1985 to July 2, 1985, the Saskatchewan Archaeological Society held a field school at the Lebret site in Area B.

The excavations initiated by the Saskatchewan Archaeological Society were later expanded by the author and his student assistant, Mr. Mark Erickson, of Fort Qu'Appelle, Saskatchewan. In the course of this work they received the occasional assistance members of the Saskatchewan Archaeological Society and other individuals from Fort Qu'Appelle.

During July and August, two other areas were also excavated. These were Area R, located in Block 7 on Lot 4, and Area S, located in Block 7, Lot 5. Both areas were excavated due to the impending impact of development by the respective landowners. Area R was the first area of attention, as a septic tank on his property. Circumstances did not allow for complete excavations of this septic tank area, but partial salvage operations were possible and 9 square meters were excavated here. This data is not included in this thesis due to the salvage nature of the excavation, but is being studied separately by the author at present. Area S, was the proposed location of a basement excavation.

A total of 7.5 square meters was excavated in this area before the basement was excavated in mid-September. At present, the total excavated area at the Lebret site is 43.5 square meters.

All of the survey and excavation of the Lebret site was undertaken in a salvage context. The research goals and problems were, therefore, limited to two major and quite general goals. These goals were expanded and modified somewhat as excavation proceeded and more became known about the site. The research goals are restricted to prehistoric occupations at the Lebret site. While historic materials are present in the disturbed plough zone layers of the areas excavated, no intact historic features were investigated. The nature of the historic occupations at the Lebret site are outlined in Walker and Smith (1985) and will not be included in this thesis. The research problems dealt with here are briefly outlined below.

1.1 Problem One: The Need to Establish a Regional Chronology for the Qu'Appelle River Valley in Southeastern Saskatchewan

The first major problem was that, although general chronologies have been developed for southern Saskatchewan (most recently by Dyck 1983), little is specifically known about the culture history of the Qu'Appelle Valley. Several studies, some large but very general (Arthur and Sharp 1977), and some smaller and specific (Hanna 1983), have demonstrated the wealth of prehistoric and historic cultural material in

the Qu'Appelle Valley. The first goal of the present research was to investigate the Lebret site with the specific goals of culture historical reconstruction: to define, to describe and to date the occupations present in this stratified multicomponent site.

1.2 Problem Two: The Need for an Environmentally Sensitive Regional Approach for Cultural Historical Interpretation in the Northern Plains and Parklands

The second goal is also cultural historical in nature and arises out of the data base recovered from the Lebret site's prehistoric occupations. Interpretation of subsistence and traditional lifeways for Northern Plains historic and prehistoric groups has been centred on the largest and most dominant ungulate species, the bison. It has been and continues to be (e.g., Wedel 1986) assumed that Northern Plains lifeways were centred on the movements and behaviours of the bison and little else mattered in the daily lives and seasonal rounds of these nomadic hunter-gatherers. This initial assumption has produced a nearly total bison mono-culture view of prehistoric Northern Plains lifeways.

The Qu'Appelle Lakes area, situated on the western edge of the Parklands in the Qu'Appelle Valley, however, would afford shelter, water, firewood, and abundant and varied food resources. The Reverend C. Hillyer reported in October, 1852, that:

> In this valley a large body of Crees always winter and it is called by them their house...Ducks and geese are most abundant, & come earlier & leave later than anywhere

> in these parts some remain occasionally the whole winter. It is a favorite resort of the buffaloe in the winter, they come there fore shelter. There are also large herds of deer, the jumping deer, & the Cabray [antelope] it is a small kind but abundant (S.A.B., #S-B81, P.A.C., Reel No. A.88, C.M.S., Series C/10).

The Lebret site materials reflect this diversity in subsistence strategies and demand that a new look be taken at Northern Plains groups seasonal cycles and lifeways. The artifact assemblages consist of those fairly typical of Northern Plains complexes of the Middle Plains Indian Period (Dyck 1983:87) through the Late Plains Indian period (Ibid.: 110). The former consist of Late Oxbow or McKean-Hanna or Pelican Lake and Sandy Creek, and the latter of Avonlea and Late Prairie and Late Plains Side-Notched complexes. The faunal assemblage indicates, however, that fish and other riverine-oriented wild fowl and mammal species were being exploited, as well as bison. Bison are present, but are clearly not the dominant species being exploited by the prehistoric occupants of the Lebret site.

The second goal, then, is to clarify the relationships between Northern Plains groups and regional exploitation of cultural resources. The Lebret site material will be used to present an interpretive model as an aid towards the understanding of subsistence practices as they currently relate to bison hunting and the exploitation of non-bison resources.

1.3 Summary of Research Goals

The research goals of the Lebret Archaeological project were to establish a data base that would be useful in cultural historical reconstruction. The research goals were simply to determine, if possible, five fundamental questions that are basic to investigating a relatively new archaeological area. These questions are: (1) what kind of site is the Lebret site and what are its contents? Essentially, this is a question of what happened at the site and how did these things happen; (2) where is the site located culturally, geographically and temporally? In other words, where can this site be placed in relation to the other sites in the overall culture history of Saskatchewan, and the Northern Plains in general; (3) when was the site occupied, i.e., the actual age, and on a finer scale, at what time of year or during what season(s) was the Lebret site inhabited?; (4) what archaeological complexes are present?; and finally, (5) why does the Lebret site exist, and why did its inhabitants choose to occupy the site?

These five questions and associated research goals are the basic building blocks towards obtaining an archaeological understanding of the Qu'Appelle Valley of Saskatchewan. These lay the foundation for both the reconstruction of culture history and of the lifeways of the occupants of the Lebret site and of similar environmental areas of the Northern Plains.

The overall aim is, however, to establish a regional culture history rather than to provide a generalization of Northern Plains (Figure 1.2) archaeological complexes and lifeways based on the Lebret findings. A regional culture history is one that roughly corresponds to an area of resource utilization exploited by a regional band. Once this has been established, it should be possible to make some generalizing statements about the importance of the Lebret site with reference to the prehistoric occupation of the Grasslands/Parkland interface.

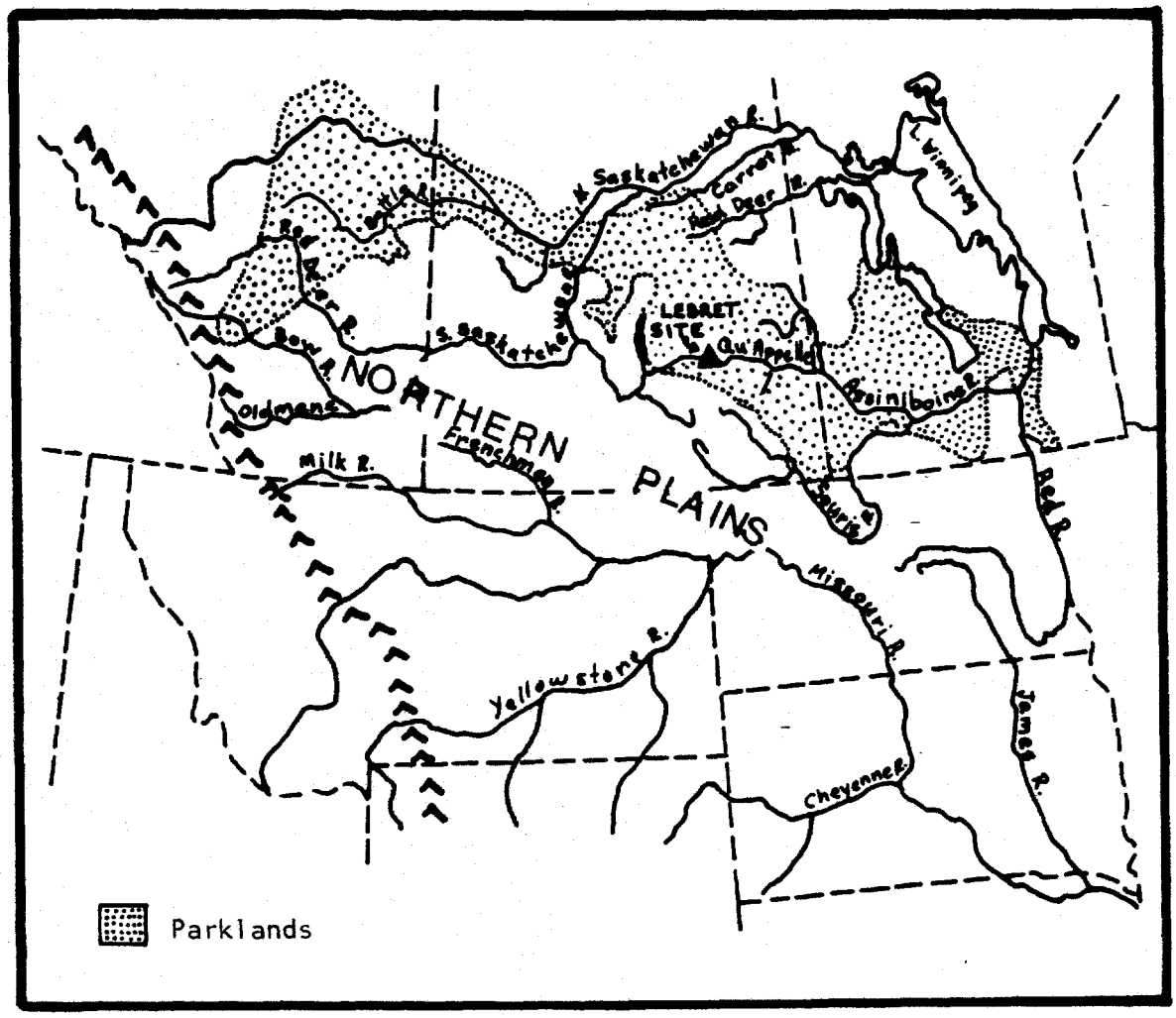


Figure 1.2: The Lebret site on the Northern Plains

2.0 THE ENVIRONMENTAL SETTING OF THE LEBRET SITE

2.1 Physiography of the Lebret Site

The Lebret site is located on the south valley bottoms of the Qu'Appelle River Valley in southeastern Saskatchewan. The Qu'Appelle Valley is the largest glacial spillway in the Qu'Appelle Plains of the Saskatchewan Plains Region (Second Prairie Level). This valley contains the underfit Qu'Appelle River, and several natural, freshwater lakes that are impounded in the valley behind alluvial fans (Richards 1969:41). There are four such adjacent lakes in the immediate area. The Lebret site is situated between two such natural lakes, Katepwa and Mission, or the first and second "Fishing Lakes", respectively (Figure 2.1). Echo and Pasqua make up the third and fourth "Fishing Lakes". The Qu'Appelle River flows through these lakes and passes the Lebret site along the south side of the Qu'Appelle Valley.

The Lebret Marsh is located immediately to the north of the Lebret site (Figures 2.2 and 2.3). This marsh area has formed at the edge of a glacial alluvial fan which has its origins on the north side of the Qu'Appelle Valley. The Qu'Appelle River meanders along the edge of this area creating the marsh. The river along the south valley wall has been dredged several times in the past to allow for better water flow and its effect has been to create an artificially straight canal-like river course through the Lebret Marsh.

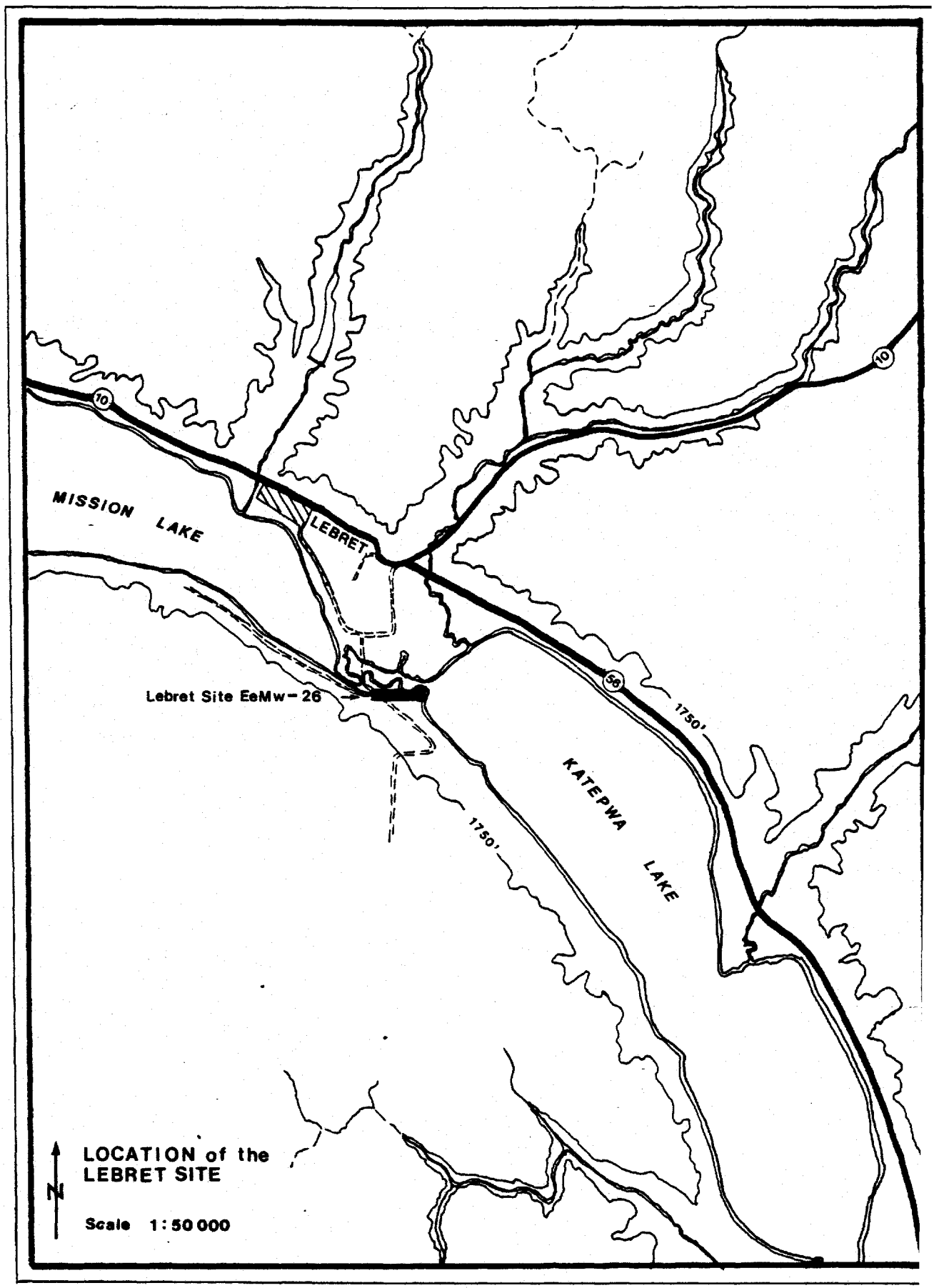


Figure 2.1: The Lebret site (EeMw-26) in the south valley bottoms between Mission and Katepwa Lakes.

Figure: 2.2: Location of the Lebret site looking southeast across Lebret Marsh.

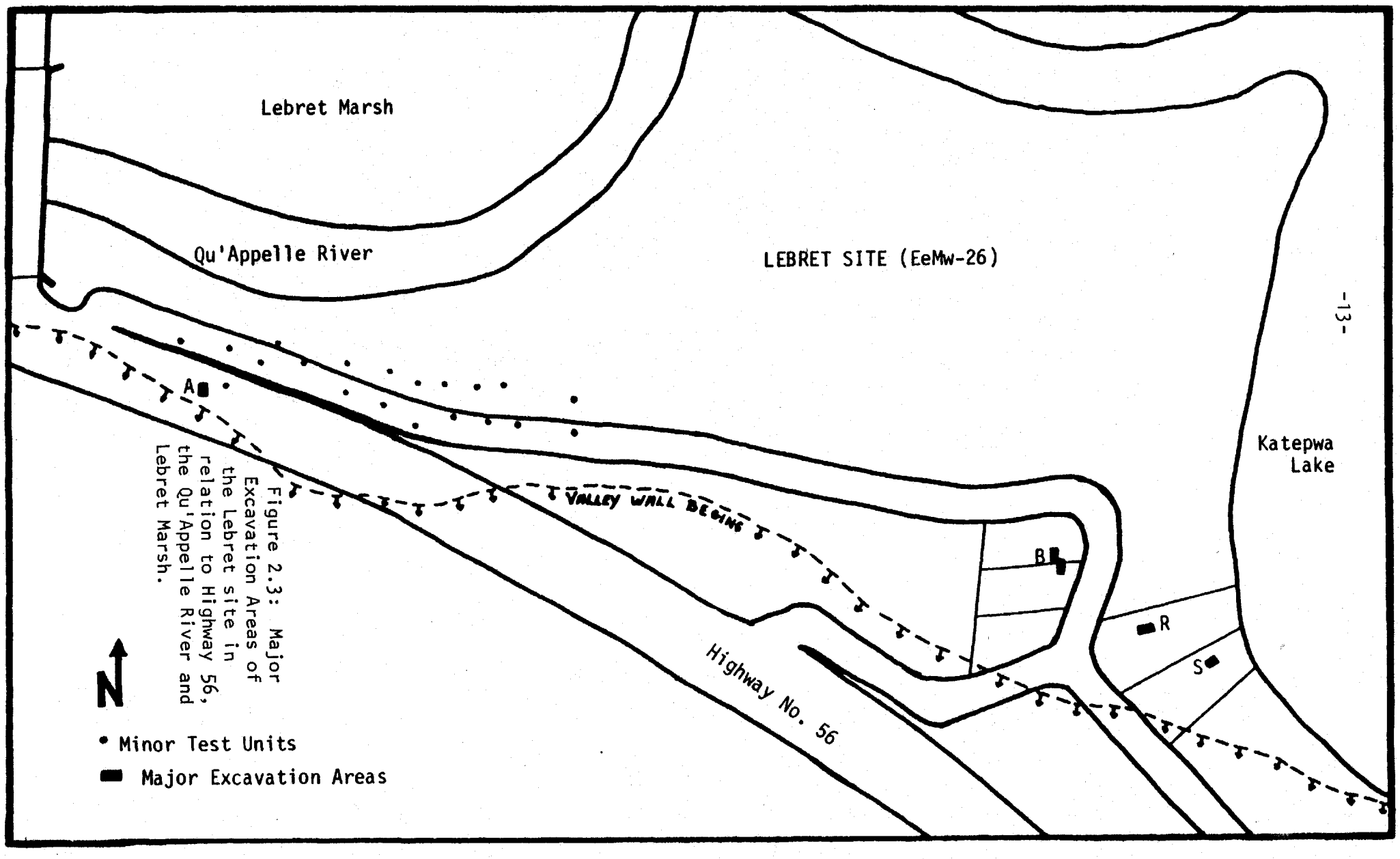


Figure 2.3: Major Excavation Areas of the Lebret site in relation to Highway 56, the Qu'Appelle River and Lebret Marsh.

The Qu'Appelle Valley, from the "elbow" of the South Saskatchewan River to its confluence with the Assiniboine River Valley, some 400 kilometers to the east, has a broad trench-shaped profile averaging three kilometers in width and 80 meters in depth (Klassen 1983:214). This valley was excavated by glacial meltwater during the last deglaciation some time between 14,000 and 13,000 years ago (Ibid.:222).

The area around Lebret was first deglaciated during Christiansen's (1979:932) Phase 4, approximately 14,000 years ago. The Qu'Appelle River Valley functioned as a meltwater spillway at this time. Glacial meltwater flowed eastward to the Assiniboine Spillway eventually emptying into that portion of Glacial Lake Agassiz situated in present day southwestern and central Manitoba and North Dakota. The retreating Laurentide Ice Sheet front was likely a series of stagnating ice zones rather than a distinct continuous front or margin (Ibid.:917).

Soils in the Qu'Appelle Valley bottom are variably textured with poorly drained sub-soils (Mitchell, Moss and Clayton 1944:Map Sheet 4). The Qu'Appelle Valley walls consist primarily of colluvium and slump blocks (Klassen 1972:549). The surrounding uplands are generally chernozemic or black soils, referred to as Indian Head Clay, which are medium- to heavy-textured soils developed on glacial lake deposits or clay loam or Oxbow loam varieties, associated with glacial lacustrine deposits exhibiting a rougher

topography. The latter soil is generally dark with frequent occurrence of glacially deposited stones (Mitchell, Moss and Clayton 1944:104).

The valley wall at the Lebret site rises approximately 51 meters from the shoreline of Katepwa Lake to the plateau (Lebret Terrace). The valley wall landforms at the site represent a fairly uniform and continuous stable slope with an absence of ridges with little slumping obvious in this particular area. Surface drainage is continuous, with no natural undrained areas present (Geological Report 1982:4, 5). All of the major slopes in the site area have occurred as a result of erosion. The stable nature of the valley slope is consistent with the established geological information that the bedrock surface is many meters below the valley bottom, and is overlain by fairly well-drained, competent tills and stratified drift deposits (Ibid.:6, 10).

A stable slope is a mature landform which is in a state of equilibrium with its environment. The natural slopes at the Lebret site present a rounded profile as materials which have eroded from the upper part of the slope have been transported over the middle slope section and finally deposited at the lower parts of the slope. All areas excavated at the Lebret site presented this stable, smooth and regular slope geometry.

2.2 Climate of the Lebret site

The Lebret site, situated on the edge of the Parkland Ecoregion and the eastern edge of the Grassland Ecoregion (Figure 2.4), cannot easily be described as experiencing a climate that is typical of either of these broad regions, as depicted by Kendrew and Currie (1955). The climate of the Mixed-Grass Prairie and Aspen-Bur-Oak interface, within which the Lebret site is located, is described as a Dry-Warm climate with a relatively low annual precipitation between 430 and 475 mm. This relatively low annual precipitation is coupled with great extremes in temperature. The area experiences a mean January temperature of about -17 degrees Celsius and a mean July temperature of 19 degrees Celsius. Valleys such as the Qu'Appelle may, however, experience even colder temperatures that may average around 3.8 degrees Celsius cooler than the surrounding uplands due to cold air draining into the lower valleys. However, these valley areas may also average a few degrees warmer in the summer (Currie 1953, cited in Homan 1983).

This unique valley characteristic may have directly affected the Qu'Appelle Valley's prehistoric occupation. Not only would the valley area experience colder winter-time temperatures, but also potentially greater variation in daily and night-time temperatures in the summer. One local informant, Mr. Jim LaRocque of Lebret, informed the author that during the late 1800's, Cree peoples living near his

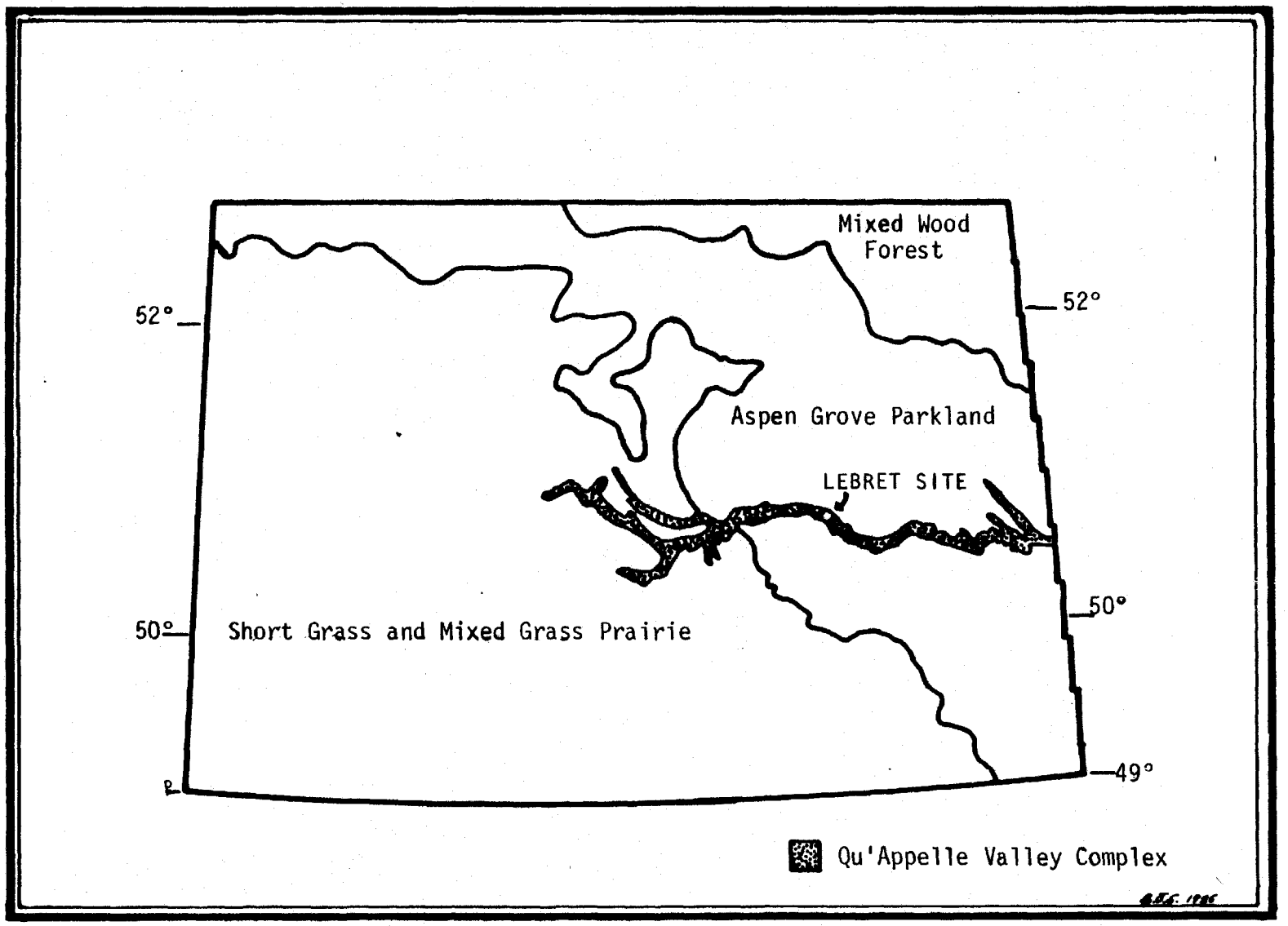


Figure 2.4: Lebret site (EeMw-26) in relation to the Qu'Appelle Valley Complex and the Major Ecoregions of Southern Saskatchewan. (After Richards and Fung 1969:77)

grandfather's homestead never camped directly at the mouth of a coulee valley that drained into the Qu'Appelle Valley. The reason for this was to avoid the cooler temperatures that occurred during the summer nights as cold air drained down the coulee creating a cold draught as it entered the low-lying valley proper. These night-time temperatures can become quite severe during clear mid-summer nights. Several years ago the present-day LaRocques and others who live in the valley at a coulee mouth experienced a killing frost in the gardens during late July (J. LaRocque 1985, personal communication). Thus, daily and nightly extremes in temperature and the flow of air into the valley may have influenced the choice of site location in both summer and winter seasons. The Lebret site is not located at a major coulee mouth suggesting perhaps, that the site location was desirable climatically.

Kendrew and Currie (1955:150) note that the wind direction with the maximum frequency depends, to some extent, on the local topography. In southeast and south-central Saskatchewan, the winds are most frequently from the northwest in the winter and in the summer southeast winds are generally as frequent as northwest winds. Wind speeds average between 19 and 25 kilometers per hour, with the highest wind speeds occurring in the spring and the lowest in late summer and mid-winter. Maximum daily wind speeds average about 32 to 48 kilometers per hour in the Parklands

which is, on average, 16 kilometers less than on the open prairies. The same is likely true for the tree-covered south valley slopes of the Qu'Appelle Valley around the Lebret site.

The presence of Mission and Katepwa Lakes may also provide a moderating effect on the local climate - at least during periods of open water from spring through the summer and into the fall. Aquatic temperatures are rarely considered as influential to the largely terrestrial life-styles of Northern Plains prehistoric peoples. They may, however, have had some impact on the Lebret site's prehistoric inhabitants due to their close proximity to the large fresh water lakes.

2.3 Vegetation of the Lebret Site

In very broad terms, the Lebret site is located on the edge of the Parklands near the interface of the Parkland Ecoregion and the Grassland Ecoregion. More specifically, the site is situated at the interface of the Mixed-Grass Prairie Ecodistrict and the Aspen-Bur-Oak Ecodistrict. This ecotonal setting offers a wide variety of floral types.

The Lebret site is situated in the Qu'Appelle Valley amidst a vegetation community referred to as Valley Complexes (Coupland and Rowe 1969:74). These Valley Complexes present a diverse number of plant species throughout the Qu'Appelle Valley. The Lebret site is located near the Grassland/Parkland interface and the surrounding upland

vegetation is more characteristic of Grasslands than Woodlands. The Valley Complex vegetation presented a unique advantage to the Lebret site's prehistoric inhabitants living in a Parkland-like valley setting surrounded by a largely Grassland area. Because of the Valley Complex vegetation a Parklands-like area is present and beyond into the Grasslands, much like a peninsula jutting into the sea (Figure 2.4). This enabled a larger variety of habitats to be exploited in this peninsula-like region by Northern Plains oriented groups who would have otherwise had to travel farther east and north to reach the Parkland.

The Lebret site's immediate environs are characterized by five different habitat types: 1) Mixed-Prairie Uplands; 2) Wooded Valley Slopes and Terraces; 3) Flood Plains and Marshlands; 4) Aquatic Riverine; 5) Aquatic Lacustrine. Each habitat type is accompanied by its own vegetation regime. (See Appendix II for names of plant species in text). The vegetation of each of the five habitats will be described briefly.

2.3.1 Mixed Prairie Uplands

The Mixed Prairie Uplands surrounding the Qu'Appelle Valley is the largest ecodistrict in Saskatchewan (Harris et al. 1983:38). The Mixed Grass Prairie is part of a transition between the grasslands and the woodlands that extends from Manitoba and Saskatchewan through most of the Dakotas, Nebraska, Kansas, central Oklahoma and parts of

north-central Texas (Brown 1947:47). The area is characterized by rolling lacustrine and morainic plains with Brown and Dark Brown Chernozemic soils (Harris et al. 1983:88). The uplands are characterized by potholes left by the glacial retreat which range in size and permanency (Brown 1947:47; Syms 1977:19). Typical vegetation consists of a variety of grasses and herbs. Dominant communities in well drained areas consist of spear grasses, wheatgrasses and June grass. Where trees do occur, the dominant species is aspen poplar, with an understory of western snowberry and wolf willow.

2.3.2 Wooded Valley Slopes and Terraces

The north- and south-facing valley slopes differ in the degree and types of vegetation cover. The south- and west-facing slopes receive more sun and energy than slopes that face the north and east and are warmer and drier as a result (Christiansen et al. 1981:29). The south-facing valley slopes are practically devoid of trees while the north-facing slopes generally support a denser vegetation cover.

North side valley slope vegetation is dominated by grass such as low blue gramma and by thread-leaved sedge. Stunted trees and some shrubs, such as aspen, saskatoon, chokecherry pincherry, hawthorn, snowberry, buffalo berry and rose are found on the valley's north side where natural fresh water springs occur. These springs are quite numerous on both sides of the valley. A small flowering cactus, the many-spined

Opuntia also grows in abundance among the north side's grasses.

South side valley slopes are generally well treed, presenting an overall appearance similar to more northern and eastern Parkland. The vegetation is dominated by larger trees such as aspen, chokecherry, saskatoon, and pincherry (Christiansen et. al. 1981:29). These drought resistant species rise above the less hardy floodplain vegetation.

2.3.3 Flood Plains and Marshlands

Flood plain conditions are more favourable for less drought tolerant species (Ibid.). As a result, it is common to find a lusher, more consistent vegetation cover on the southern flood plains, although occasionally the northern flood plains support a vegetation similar to that described below.

The Qu'Appelle Valley flood plains support stands of Manitoba maple, green ash, and American elm. Shrubs such as Red-osier dogwood and several willow species are common. The latter shrubs are often the most dominant species present. Quite often, the valley slopes are gradual as is the transition from a slope vegetation to flood plains vegetation.

The marsh areas (such as the Lebret Marsh near the Lebret site) are characterized by emergent vegetation typically located in areas covered by shallow water at least during the growing season (Christiansen et al. 1981:21-22).

The major species of the Lebret Marsh include cattail, bullrush, common reed grass, and several species of sedges. The marsh vegetation slows water circulation and provides wind breaks so that the shallow water warms quickly becoming rich in nutrients and green algae. This environment produces an abundance of animal and insect life, forming a large community at the base of the aquatic food chain. In turn, this supplies larger animals and birds, creating a rich marsh environment (Ibid.:21-23).

2.3.4 Aquatic Riverine and Lacustrine

The riverine or stream environment is characterized by the meandering underfit Qu'Appelle River. At the Lebret site the river flows through the Lebret Marsh along the periphery of the alluvial fan that extends southward from the north side of the Qu'Appelle Valley. The stream environment is, therefore, much like the marsh in terms of vegetation at this site.

The lacustrine vegetation around the shores of Mission and Katepwa Lakes varies with the location and localized topography. The south shores of both lakes support a marsh environment and vegetation in areas where the slope away from the water is gradual. The shorelines in these areas are indefinite, primarily supporting sedges and grasses. Where the valley slope is quite abrupt at the shoreline, willows and green ash dominate.

Overall the vegetation in the immediate area of the

Lebret site is as varied and as rich as the local topography. Each localized vegetational zone supports a complementary faunal regime which is equally as varied. The relative richness of the valley, especially around the Lebret Marsh would make the area quite attractive for habitation.

2.4 Fauna of the Lebret Site

The faunal communities found in the Qu'Appelle Valley near the Lebret site include a wide range of mammal, bird and fish species. The fauna may be roughly divided into two communities: the terrestrial community and the aquatic community. (For scientific species names see Appendix III).

The terrestrial faunal species are those mammals and birds which habitually occupy dry land. The aquatic communities include species that may not always live in an aquatic environment, but are more closely tied to water. These species would normally be found in close proximity to a permanent water source.

The species lists in Appendix III are not exhaustive, but do provide an idea of the range of faunal resources available to the prehistoric and early historic inhabitants of the Lebret site. The division of the fauna into terrestrial and aquatic communities is made to emphasize the relative importance of aquatic environments to the occupants of the latter site - in contradistinction to the established emphasis on terrestrial faunal resources in most Northern Plains archaeological and ethnographic work.

The emphasis on large terrestrial-oriented fauna in Northern Plains archaeological reports is generally merited; however, this emphasis has had the effect of limiting the consideration of the importance of aquatic faunal resources in prehistoric subsistence economies.

2.5 The Need For An Integrated Approach to Terrestrial and Aquatic Faunal Resources

There are certain basic common denominators that are considered when assessing the potential yields and cultural significance of faunal resources for human consumption. These common factors, used in archaeological interpretation, (e.g., Lee and Devore 1968; Cox 1973) rely heavily on the assumption that: in order for man to take advantage of live faunal resources for his own means, he must possess a working knowledge of the behaviour of the animal resources he wishes to utilize. In a hunting-gathering society, the harnassing of energy is largely based on the animal and vegetable foods and by-products that allow a society to continue its existence. In the case of animal resources, this would include furs and skins for clothing and shelter, or bone and sinew for performing utilitarian tasks, or even materials used as part of the society's spiritual life by furnishing those implements used in its rituals. Ultimately, a society's existence is wrought from the natural world. This includes the lithic materials such as the rocks used to encircle tents or fire places or for tempering ceramic vessels. This also includes the vegetable materials used for

basketry and woven nets and the edible plants and berries that compose part of a hunter-gatherer diet. It also obviously includes the animals hunted for deriving nourishment and shelter, as well as a host of other material items. To understand how a society is held together, one must understand the fabric of that society, and to understand the fabric, one must be fully aware of all the items that make up the cultural material.

Given the nomadic nature of hunting and gathering societies, the issues become more complex due to the mobility of the society's members and their ability to pick up and search for the critical factors that allow continuation of the society. The mobility factor is also complicated by the ecological factors of season, creating different needs at different times of the year. This is also restricted by the degree of technology that a particular society has at its disposal to extract this livelihood from the surrounding environment. In effect, the environment is one deciding factor. Man's ability to utilize the environment is limited both by his technology and the economics of employing that technology. This technology is also limited by the number of individuals a particular society has to implement the associated activities of that technology at a given time. The environment exploited by hunters and gatherers, however, is generally limited in terms of geographical space and physiographic nature.

With respect to the terrestrial activity of bison hunting on the Grasslands, it is known that prehistoric hunters and gatherers had an understanding of bison behaviour and took advantage of the bison's gregarious nature in order to herd them into traps or pounds. How terrain features, such as box canyons, cliffs and coulees, were incorporated into the hunt in order to trap these animals is also apparent from studies of bison kill sites. Archaeologists also have some idea of the work involved in organizing a large hunt, through visually examining the remains, and through historic documentation. They also have knowledge of the value placed on the success of the hunt by recorded accounts of the systems employed to ensure success (Verbicky-Todd 1984:115-116) and to punish individuals who caused failure. As well, archaeologists and anthropologists are quite aware of the multiple uses made of bison by the Northern Plains peoples: e.g., food, shelter, clothing, and for utilitarian items such as fleshers and bone knives. The more esoteric spiritual aspects, including the ceremonies involved in a successful bison hunt are also known. It is clear, therefore, that bison were a major resource to Northern Plains Indians. However, while bison permeated the whole of Northern Plains cultures there were other important resources as well.

Water is a critical resource to all human societies. Archaeological sites are almost always located near water. While the terrestrial environment does provide most of the

necessities of life, water is critical, year-round, season-to-season, in the life of all terrestrial creatures. While the most obvious benefit of aquatic environments to people is as a source of potable water, it is not the only resource that may be exploited. As has been discussed, there are many aquatic plants and aquatically-oriented animals and wildfowl that are denizens of the aquatic riverine and lacustrine zones. This aquatic habitat must be dealt with by peoples wishing to utilize the aquatic plant, animal, fish, and bird resources found there. In other words, these people must have an understanding of the aquatic environment and the associated behaviours of the faunal and vegetational resources in order to exploit them.

The aquatic environment is distinctly different from the terrestrial environment. It stands to reason, then, that the behavioural characteristics of the aquatic-oriented faunal resources will be significantly different from those of terrestrial species. In order for archaeologists to interpret the human activities surrounding these aquatically-oriented hunting and gathering activities, an integrated understanding of both the terrestrial and aquatic environments, which are vastly different, must be obtained. Unless this is done, assessing only the terrestrial environment may lead to a biased view of exploitation strategies in some environments. Assessing both aquatic and terrestrial environments will establish the potential of a

region, and then reviewing the archaeological data should reveal just how that region was utilized.

In comparison to the better understood terrestrial environment, the aquatic environment is stable and remains relatively unchanged over extended periods of time. When it does change, the alteration is often slow and extremely moderate. Temperature is a good example. The temperature of air and land may rise and fall a good many degrees in a single 24 hour period, but aquatic temperatures generally remain relatively stable within the same 24 hours. The aquatic environment is much more reliable. It will not burn up and become immediately devoid of life in a short span of time, as the prairie will during a fire. It will freeze in winter, but life goes on beneath the ice. Aquatic faunal resources, therefore, tend to be reliable and predictable year after year. The faunal resources contained within the aquatic environment are also limited to a confined space and cannot escape across a seemingly endless landscape as terrestrial beasts may do upon occasion.

There is a need, therefore, to begin to understand the nature of aquatic-oriented resources on the Northern Plains and Parkland areas, particularly in regions where there are large, dependable freshwater lakes and rivers. This understanding must be added to the large body of data already compiled about the utilization of terrestrial environments by Northern Plains groups in prehistory. This demands that

finer regionalized approaches to the interpretation of Northern Plains lifeways be attempted. This will only be accomplished by questioning the currently-held basic assumptions about Northern Plains groups utilizing aquatic resources and by studying aquatic resources with the same emphasis already placed upon the utilization of terrestrial resources within the Northern Plains culture area. This will only be possible if an understanding is reached about the importance of the aquatic-oriented resources available to Northern Plains and Parkland dwellers. One such food resource is fish. The importance of fishing on the Northern Plains is outlined in Chapter 10 in the belief that through a study of fishing and aboriginal fishing practices, a better understanding and clearer interpretation of regional resource exploitation may be possible. Thus, a more well-rounded picture of Northern Plains lifeways will be established.

3.0 THE PREHISTORY OF THE QU'APPELLE VALLEY

3.1 Introduction

There is very little specific published information on the prehistoric occupations of the Qu'Appelle River Valley. There is, however, the potential for human occupation of the area dating back to 12,000-10,500 years B.P. based on glacial information (Klassen 1983:222) and cultural recoveries in southern Saskatchewan (Dyck 1983:71). A number of archaeological surveys and minor excavations in Saskatchewan and Manitoba indicate that the Qu'Appelle River Valley and adjacent feeder streams were quite heavily occupied in the prehistoric period (Arthur, Sharp and Wilson 1975; Arthur and Sharp 1976, 1977; Hanna 1983; Smith 1983, 1986; Walker and Smith 1985). While the above reports show that the Qu'Appelle is indeed rich in heritage resources, specific archaeological information on cultural lifeways, temporal periods and geographical distribution of discrete cultural complexes is virtually non-existent for the entire Qu'Appelle Valley area. Much of the information presently available about the area's culture history is based on surface finds that are comparable to similar materials excavated in other areas of Saskatchewan, Manitoba, Alberta and the northern United States. This information is limited in that it only provides a very general culture history of the Qu'Appelle Valley region.

The following is a general cultural historical

representation (taken largely from Dyck's [1983] overview of southern Saskatchewan) of potential cultural complexes that likely make up the cultural chronology of the Qu'Appelle Valley. It is a cultural-historical reconstruction that will certainly undergo revision or embellishment as time and research progresses.

3.2 The Pleistocene Hunters Period (17,000 B.P. to 10,500 B.P.)

Dyck (1983:69-73) describes the first potential period for human occupation of southern Saskatchewan as the end of the Pleistocene. Although this period begins around 17,000 B.P. (Ibid.:69), there is very little possibility that human occupation of the Qu'Appelle Valley took place much before 14,000 B.P. when the area around Lebret was first deglaciated (Christiansen 1979:932). There is some doubt as to whether the area would have been habitable at this time, as it was likely covered with a series of stagnating ice zones left by the retreating glacier (Ibid.:917-918). Until around 10,500 B.P. (Ritchie 1976:1806), the environment was likely an open spruce forest somewhat comparable to the modern day northern Boreal Forest. Others (Kupsch 1960:291); McAndrews et al. 1976:111) suggest that due to the presence of shrubs such as buffalo berry and wormwood, the Late Glacial Forest (14,000-10,000 B.P.) was a combination of Forest and Parkland or perhaps intermittant forest with Parkland-like vegetation also present. Likely, however, the spruce forest, whatever its characteristics, began to decline and a Parkland-like

savannah began to expand into southern Saskatchewan around 10,600 B.P. or perhaps even a thousand years earlier (Ritchie 1966:Figure 2). The area probably was home to large game animals such as mammoth, horse, caribou, camel and bison (Pettipas 1975:9).

Although Dyck (1983:70-71) includes a "Pre-Clovis Series" in his discussion of cultural complexes indicating a possibility that cultural materials dating to a period between 17,000 and 12,000 B.P. could potentially be present in southern Saskatchewan, there is no evidence yet to support the presence of human activity in the province or the Qu'Appelle Valley relating to this period. The only cultural complex of the Pleistocene Hunters Period for which there is evidence of occupation in Saskatchewan occurs after 12,000 B.P. The Clovis Complex, elsewhere dated between 11,300 B.P. and 10,500 B.P., is represented by six surface finds in southern Saskatchewan of the diagnostic, partially fluted, lanceolate spear points (Dyck 1983:71). The Clovis Complex represents a cultural complex based on large Pleistocene game animals, notably mammoth and mastodon, but also including other mammals as well. Likely Clovis represents the first real human occupation of southern Saskatchewan as the post-glacial environment became more stable and habitat. No Clovis materials have been found in the Qu'Appelle Valley; however, the potential for very early occupation of the valley rim, as the Qu'Appelle was a major meltwater channel

until around 12,000 B.P. (Christiansen 1979:932-933), begins with the Clovis Complex.

3.3 The Early Plains Indian Period (10,500 B.P. to 8000 B.P.)

The transition from a spruce forest to a spruce forest-Parkland savannah which began around 10,600 B.P., or perhaps earlier in southern Saskatchewan, continued and Grasslands began to become dominant around 10,000 B.P. replacing the spruce forest (Dyck 1983:73). The transition was furthered by a change in climate from the apparently stable and warm Late Glacial climate (c. 14,000 - 10,000 B.P.), that resulted in the decline of the glacial ice sheets, to a cooler Pre-Boreal type of climate lasting from around 10,500 to 9650 B.P. (Ibid.:73). At this time, many Pleistocene species such as the giant ground sloth, the horse, the camel, and mammoth and mastodon became extinct. This may have related to the change in vegetation and competition from other more adaptable species such as bison which became the dominant Grassland herbivore. Dyck (1983:73-86) lists three major styles or traditions of spear points associated with the Early Plains Indian period bison hunters. These are: 1) the Lanceolate Fluted or Basally-Thinned-Tradition associated with the Folsom/Midland and Plainview Complexes; 2) the Lanceolate Straight or Rounded Base Tradition, characterized by the Agate Basin and Hell Gap Traditions; 3) the Lanceolate Stemmed tradition characterized by the Firstview, Alberta, Cody, Milnesand point types. Very little is known about

the earliest of these complexes and, like the Clovis Complex, much of the evidence is based on surface finds from Saskatchewan which are compared to excavated finds from sites in the United States. Only artifacts from the Cody Complex have been found in an excavatable context at the Niska Site (DkNu-3) near Pontiex in southwestern Saskatchewan (Meyer 1985). A number of lanceolate forms which Dyck (1983:82-83) labels as "Late Lanceolate" include the Frederick, Lusk, Angostura, and Browns Valley lanceolate points dating between 9200 B.P. and 8000 B.P., and are included in the Early Plains Indian Period under a subdivision known as the Late Early Plains Indian Period (9200 to 8000 B.P.) (Ibid.).

These Early Plains Indian Period complexes mark the beginning of an apparent heavy dependence on bison on the Northern Plains which was to last until the near-extinction of the bison in the late 1800's. An "apparent" dependence on bison is noted because most of the current evidence for these complexes is entirely made up of the projectile points themselves or the association of projectile points with bison remains. Due to the lack of excavated sites in this period, little else may be said about the nature of the prehistoric lifeways associated with these complexes in Saskatchewan.

Evidence for Early Plains Indian Period occupation of the Qu'Appelle Valley is sparse. Three projectile points that are assignable to this period have been recovered near

the Qu'Appelle Valley. One brown chalcedony stemmed lanceolate point fragment was a surface recovery on the north valley rim north of Echo Lake. It is identified as a possible Scottsbluff point (Tomenchuk 1970:22). Two other Scottsbluff points were found near Lipton, Saskatchewan, a small town 9 km north of Echo Lake (Tomenchuk and Seib 1973: 11-14). A single Eden point made of Knife River Flint was examined in a private collection from the Cupar area. A Browns Valley point, also from the Fort Qu'Appelle area, was also noted by the author in a private collection, providing evidence for occupation of the Qu'Appelle Valley between 9200 and 8000 years B.P. (Ibid.:82).

The Early Plains Indian Period, dating from 10,500 B.P. to 8000 B.P., provides the earliest evidence for human occupation of the Qu'Appelle Valley area. These finds are all surface materials and therefore, only an approximate age may be assigned. The period is characterized by the Post-Pleistocene extinctions of a large variety of large mammals and the dominance of bison as the Pre-Boreal and Boreal climates of the period allow the Grasslands to expand into the areas formerly occupied by spruce forest.

3.4 The Middle Plains Indian Period (7700 B.P. to 1850 B.P.)

The Middle Plains Indian Period (Dyck 1983:87) is characterized by changing climatic conditions. Although there is still debate about the nature of the climate (Ibid.), it appears that a long and relatively hot, dry

episode began at the start of this period. This climatic episode was once referred to as the "Altithermal" or a peak in temperatures lasting from around 7000 to 5000 B.P., resulting in drought and maximum aridity (Antevs 1955:328-329, cited in Bryson et al. 1970:55). It is now more commonly referred to as the Atlantic Period after Bryson et al. (1970:56-57). During the Atlantic Period there was a maximum eastward extension of the prairie grasslands around 7000 B.P. (Wendland 1978:279). It can be assumed that the present-day Parkland/Grassland boundary may also have been further east and north during this period and the Lebret site would have been situated in an almost total grassland environment. There is little information specifically relating to the nature of the Valley Complex vegetation at this time, but it may be assumed that this also was reduced to those species that were most drought resistant. Cooler temperatures returned around 4680 to 2690 B.P., in the Sub-Boreal episode (Ibid.:280)), and both the prairie grasslands and the temperatures are thought to have attained approximately modern positions and conditions (Ibid.:280-281). The last part of the Middle Plains Indian Period roughly coincides with another climatic episode: the Sub-Atlantic (2890 - 1690 B.P.), which is characterized by a considerably wetter climate than at present (Ibid.). It is unclear if this period of increased moisture significantly altered the position of the Grassland/Parkland interface, but

it is unlikely that significant changes in vegetation have taken place during the last 3000 years.

The archaeological complexes of the Middle Plains Indian Period trend away from lanceolate projectile point forms to smaller triangular side-notched forms. The first of these side-notched complexes, the Mummy Cave Series, is named after the stratified Mummy Cave site in Wyoming (Wedel et al. 1968) where a long sequence of side-notched projectile points dating from 7600 B.P. until historic times was uncovered (Dyck 1983:92). Reeves (1969:30-31) has proposed that the Mummy Cave Complex should apply to all Northern Plains and peripheral complexes dating between the beginning of the Mummy Cave side-notched sequence and the Oxbow Complex beginning around 4700 B.P. (Dyck 1983:92). Mummy Cave materials have been recovered archaeologically in Saskatchewan providing secure dates for this complex in this province. Dates from the Gowen site in Saskatoon cluster around 6000 years B.P. (Walker 1980). Other sites bearing Mummy Cave side-notched points, such as Oxbow Dam and Long Creek (Level 9), are dated at just over 5000 years B.P. (Dyck 1983:89). There are no early side-notched projectile points reported from the Qu'Appelle Valley in Saskatchewan; however, this is likely the result of the lack of archaeological research undertaken up to the present rather than an abandonment of the Qu'Appelle Valley during the period from 7000 to 4700 B.P. A large side-notched point, believed to

belong to the Mummy Cave series, was recovered from the Qu'Appelle Valley rim near the confluence of the Qu'Appelle and Assiniboine Rivers in Manitoba (Smith 1983:31-32), indicating the presence, however limited, of these early side-notched forms.

The Oxbow Complex (4700 to 3050 B.P.) (Dyck 1983:96) is the first well represented complex occurring in the Qu'Appelle Valley of Saskatchewan. Oxbow points were recovered west of the Lebret area in 1974 by Arthur, Sharp and Wilson (1975), at one site (EeMw-19) south of Fort Qu'Appelle on the west shore of Mission Lake (Arthur and Sharp 1976), and at two sites, EdMu-1 and EdMt-5 east of the Lebret area in the Qu'Appelle River Valley (Arthur and Sharp 1977). Oxbow is one of the most commonly represented archaeological complexes in Saskatchewan represents a bison hunting complex that flourished for 1600 years (Dyck 1983: 96). The presence of Oxbow materials in a datable context has yet to be found in the Qu'Appelle Valley as all previously recorded occurrences are surface on the surface.

The McKean/Duncan/Hanna Complex (4150 - 3100 B.P.) represents three similar projectile point types that are commonly found together at archaeological sites. These points may, however, occur separately, but undoubtedly they represent a similar people pursuing a similar lifestyle. In Saskatchewan the range of the McKean/Duncan/Hanna Complex extends throughout the Grasslands, the Parklands and into the

southern portion of the Boreal Forest. Several McKean and Hanna sites have been recorded in the Qu'Appelle Valley west of the Lebret area (Arthur, Sharp and Wilson 1975). In the vicinity of Lebret, one McKean/Duncan/Hanna site (EeMw-19) was recorded on the west shore of Mission Lake south of Fort Qu'Appelle, Saskatchewan (Arthur and Sharp 1976). A private collection from a Lebret area site (EeMw-16) directly across the valley from the Lebret site includes four McKean points. Several McKean and Hanna sites were also recorded (EdMv-16, EdMt-12, EdMv-15) in the Qu'Appelle Valley east of the Lebret site (Arthur and Sharp 1977). A single possible (broken) McKean point was recovered from the Lebret site during excavations in Area B. Unfortunately, this point (Appendix IV, Specimen Number 7S15W-10) was recovered from Level #3 (Layer 5) in a gopher burrow, and may be associated with a deeper level, most likely Level #7 (Layer 12), radiocarbon dated at 930-945 B.C. No other McKean points were recovered from this or any other level at the Lebret site. A very late McKean/Duncan/Hanna Complex occupation then, is one of several possible occupations that may be present at the Lebret site in Level #7. The McKean/Duncan/Hanna Complex appears to be quite common in the Lebret area. Other McKean/Duncan/Hanna sites provide evidence that these people were adept bison hunters (Brumley 1975), while the Lebret site may indicate that fishing was also part of their cultural lifeways. Buchner (1978:94) also lists a variety of

mammals, birds and fish that were exploited by the McKean peoples. Several other complexes are also recognized in the Middle Plains Indian Period. The Pelican Lake Complex (3300 - 1850 B.P.) is represented by seven dated occupations in Saskatchewan sites (Dyck 1983:105). Pelican Lake assemblages are characterized by both small and large corner-notched projectile points. The Pelican Lake sites in Saskatchewan represent campsites, a buffalo pound and a cairn-burial containing secondary interments (Ibid.). The Pelican Lake Complex is apparently not as well represented in the Qu'Appelle Valley, although several Pelican Lake sites have been noted west of the Lebret area (Arthur, Sharp and Wilson 1975). One site bearing Pelican Lake materials (EdMt-1) was found east of the Lebret area (Arthur and Sharp 1977; Hanna 1983). Another Pelican Lake site (EeMx-11) was recorded on the east shore of Pasqua Lake, making it likely that the Pelican Lake peoples also utilized the environments around the Fishing Lakes. This is not surprising, as the Pelican Lake faunal assemblages have been noted as including a variety of mammals associated with both riverine and terrestrial environments. These include fish (Buchner 1979: 98).

The earliest occupation, Level #7, in Area B, radiocarbon dated at 2990 +/- 115 years B.P. may be a Pelican Lake occupation. The date certainly falls well within the range of dates for Pelican Lake in Saskatchewan. It is noted

that both McKean and Pelican Lake peoples utilized fish (Buchner 1979:94, 98). The Pelican Lake Complex is apparently less well represented in the Qu'Appelle Valley, but even this is difficult to judge because of the relatively little archaeological work to date in the area. A Pelican Lake Complex occupation, then, at the Lebret site, must also, as with the McKean occupation, remain a distinct possibility.

Two other complexes, Un-Named Complex (2500 B.P.) and the Sandy Creek Complex (2450 - 1950 B.P.) are mentioned by Dyck (1983:107-109) as occurring later in the Middle Plains Indian Period. The Sandy Creek Complex and the Un-Named Complex are both poorly known in Saskatchewan, and neither is known in the Qu'Appelle Valley. The Sandy Creek Complex is represented at only four sites in Saskatchewan and its cultural assemblage is poorly understood (Dyck 1983:108-109).

The Sandy Creek Complex was first recognized and named at the Mortlach site where it appears stratigraphically between an earlier Pelican Lake and a later Besant occupation. This occupation at Mortlach was radiocarbon dated at 2400 +/- 290 B.P. (Wettlaufer 1955:79, 81). Sandy Creek materials include shallow and obtuse side-notched, irregular shaped projectile points and "domed" endscrapers. Dyck (1983:108) claims that the projectile point types are indistinguishable from Oxbow forms, but definitely occur later in time. Wettlaufer (1955:79) saw Pelican Lake as

being ancestral to Sandy Creek, and claimed that Sandy Creek points were to be seen in "almost every private collection throughout the province" [Saskatchewan], and were present in Manitoba as well. Since 1955 few Sandy Creek occupations have been excavated, but Sandy Creek materials are found at the Walter Felt and Sjovold sites and possibly others such as the Herron and East Pasture sites which have Sandy Creek period dates (Dyck 1983:109). Other sites include the Cherry Point site in Manitoba and possibly site HaRk-1 in the Peace River Valley of eastern British Columbia (Ibid.). The Lebret site date of 2980 +/- 105 years B.P. is likely the earliest published date for Sandy Creek thus far in Saskatchewan.

The Un-Named Complex occurs at the Sjovold site in Saskatchewan (Dyck et al. 1980) and at Head-Smashed-In in Alberta (Reeves 1978). It may be similar to some eastern Early Woodland Complexes.

3.5 The Late Plains Indian Period (2,000 B.P. to 170 B.P.)

The final period in the prehistory of the Qu'Appelle Valley begins about 2000 B.P. and ends with the historic period and the beginning of White-European contact. The Late Plains Indian Period is noted for the introduction of ceramic vessels and small side-notched projectile points that are associated with the use of the bow and arrow weaponry. The climate 2000 years ago is that of the Sub-Atlantic Episode (2760 B.P. to present) (Wendland 1978:281) characterized by a wetter environment than present. Several other climatic

episodes are recorded during the Late Plains Indian Period. Following the moist Sub-Atlantic Episode is the Scandic (1680 B.P. to 1260 B.P.), during which time conditions become warmer and drier on the Northern Plains. This is followed by the Neo-Atlantic (1260 B.P. to 850 B.P.), characterized by continuing warm conditions but an apparent increase in moisture. The next episode is the Pacific (850 B.P. to 400 B.P.), when around 1200 A.D. drier conditions once again prevailed on the Northern Plains. The Neo-Boreal or "The Little Ice Age" began after the Pacific Episode. This episode brought colder, moister conditions to the Northern Plains until around 1850 A.D. when the warmer, drier conditions of our present climate began (Ibid.).

The Besant Complex (2000 B.P. to 1150 B.P.) became prominant during the moist Sub-Atlantic Episode. The Besant peoples were the first in Saskatchewan to include ceramics in their cultural assemblage. Besant peoples, however, maintained a side-notched dart projectile technology that they used masterfully in their pursuit of bison. Frison (1978:223) has described the Besant bison procurement systems as the "most sophisticated on the Northwestern Plains" suggesting that the Besant Complex represented a cultural climax in terms of bison procurement utilizing complex drive lanes and corrals into which the bison were herded. At the Ruby site in Wyoming, Frison (1978) described a corral system and a corresponding religious structure denoting the presence

of a shaman who performed rituals to ensure the success of the bison hunt.

Besant sites are found in the northern United States, southern Saskatchewan, southern Alberta and southwestern Manitoba and are common in the Qu'Appelle Valley. Arthur, Sharp and Wilson (1975) recorded several Besant sites west of the Lebret area. Six Besant sites (EdMv-4, EdMu-4, EdMu-5, EdMo-12, EdMt-1 and EdMs-3) were recorded in the Qu'Appelle Valley east of the Lebret site (Arthur and Sharp 1977; Hanna 1983), and four Besant sites were recorded in the Lebret area (EeNa-6; on the northeast shore of Pasqua Lake; EeMv-5; on the northeast shore of Katepwa Lake; EeMw-11; on the north shore of Echo Lake; EeMw-16; north of the Lebret Marsh on the northwest shore of Katepwa Lake).

Arthur and Sharp (1977:5) thought the Besant Complex to be one of the best represented in the Qu'Appelle Valley. While no diagnostic Besant materials have yet been recovered from the Lebret site, an occupation level in Area R at the bottom of a backhoe trench where the septic holding tank was being installed yielded an uncorrected date of 1795 +/- 175 years B.P. This occupation was only briefly inspected as construction was on-going. The occupation yielded both fish remains in a large ash-filled hearth and a bone harpoon (Appendix V, Specimen Number R-S-4).

During much the same time period as the Besant Complex, the Avonlea Complex (1750 - 1150 B.P.) (Dyck 1983:122) was

also present in Saskatchewan. The Avonlea Complex is characterized by small side-notched arrow points and conoidal-shaped, net-impressed or spiral-grooved ceramic vessels. The Avonlea peoples are regarded, like the Besant people, to have been "bison hunters *par excellence*" (Dyck 1983:122). Several large Avonlea bison trap and pound sites have been excavated (Forbis 1962; Kehoe 1973; Adams 1977; Reeves 1978), and this has perhaps biased our knowledge of the Avonlea people's bison hunting in terms of their weaponry and bison-oriented subsistence activities.

Reeves (1983:105) notes that:

> The large number of Avonlea kill sites indicate bison to be a major food resource with small ungulates forming only a minimal part of the diet. Collecting activities include fowling, fishing and plant gathering.

Although Reeves (*Ibid.*) notes other activities, including fishing, as part of the overall Avonlea subsistence pattern, he does not mention his sources, nor the location (i.e., Plains, Parkland or Woodland) for this activity. The Lebret site Avonlea component represents a campsite and fishing location. The presence of fish remains in substantial quantities is extremely important since this provides the first well documented evidence for the use of fish by Avonlea peoples in a Northern Plains/Parkland environment. Avonlea sites have a fairly wide distribution from northeastern Wyoming, Montana, southern Alberta, southern Saskatchewan, southwest and west-central Manitoba (Dyck 1983:123; Klimko

1985). They have also been recorded in the southern forest edge of east-central Saskatchewan where these peoples are practicing a more Woodland lifestyle utilizing elk (Wapiti) and beaver, although, surprisingly, fish remains are apparently minimal in occurrence (Meyer et al. 1984:25). Tamplin at The Pas Reserve site in west-central Manitoba noted the presence of moose, bison, deer, canid, black bear, beaver, and muskrat as well as several fish species and a large number of bird specimens in the Avonlea level. (Tamplin 1977:154). Several other sites, the Yellowsky site (Wilson-Meyer and Carlson 1984) and possibly the Goldsworthy site (Meyer et al. 1984:28) may represent an Avonlea occupation of the southern forest edge during periods of open water. Meyer (1984:30) notes that these northern Avonlea sites tend to be later in time (post-1000 A.D. or 950 B.P.) than those on the Grasslands.

Several Avonlea sites have been recorded west of the Lebret area (Arthur, Sharp and Wilson 1975), and one other Avonlea site (EaNa-8) was recorded on the north shore of Pasqua Lake. Avonlea appears to be less common than other Late Plains Period sites in the Qu'Appelle Valley and, according to Dyck (1983: 123), this may be a Saskatchewan-wide phenomenon.

The last 1150 years of southern Saskatchewan prehistory and the prehistory of the Qu'Appelle Valley includes two series of as yet largely undefined archaeological complexes.

These are the Late Side-Notched series: Prairie Side-Notched and Plains Side-Notched (Dyck 1983:126). Both Prairie and Plains Side-Notched series represent ceramic-bearing complexes that exhibit a great degree of variability in ceramic wares that are also largely undefined for southern Saskatchewan in general.

Kehoe's (1966, 1973) study of the small side-notched point system of the Northern Plains provided evidence that, following the Avonlea Complex, around 1200 B.P., a variety of small triangular, slightly irregular side-notched points appeared and they continued to be made on the Northern Plains until around 700 B.P. (and perhaps a few hundred years more). Both Dyck (1983:129) and Kehoe (1966:839) see these points as closely resembling Middle and Late Woodland point types found in Manitoba and Minnesota. Around 550 B.P., and perhaps a few hundred years earlier, Plains Side-Notched points appear. These last until the beginning of the historic period (Dyck 1983:129). The Plains Side-Notched points have more regular triangular shapes and their notches are well removed from the basal edge, whereas the Prairie Side-Notched points exhibit notches much closer to, or almost touching the basal edge (Ibid.). A variety of ceramic vessel styles are commonly associated with both Side-Notched series but due to a lack of research, these ceramic variations and complexes are largely undefined for both the Late Prairies and Late Plains Side-Notched Complexes (Dyck 1983:132).

A number of sites bearing both the Late Prairie and Late Plains Side-Notched points and associated ceramics have been found throughout the Qu'Appelle Valley. These sites occur both west (Arthur, Sharp and Wilson 1975) and east (Arthur and Sharp 1977) of the Lebret area. In the vicinity of the Fishing Lakes two Prairie Side-Notched sites were recorded on the shores of Pasqua Lake (EeNa-8 and EeNa-12) and one on the southeast shore of Katepwa Lake. Plains Side-Notched points were also recorded at site EaNa-8 on the north shore of Pasqua Lake. Late Prairie or Plains Side-Notched point varieties occur in the upper levels of the Lebret site. Unfortunately, most of the very Late Plains Indian components at the Lebret site were disturbed by cultivation. However, two intact Late Plains and possibly Prairie Side-Notched components were recorded in Area S. One is assigned to the Late Plains Side-Notched Fall River Complex and the other is a Late Side-Notched series occupation that may be either a Late Plains or a Late Prairie Side-Notched occupation. No projectile points were recovered from these components, however, several ceramic vessels of varying styles were found including a single Blackduck vessel.

The Fall River Complex was first described by Wettlaufer in 1960 for the uppermost levels at the Long Creek site near Estevan. Syms (1977:125) has included the assemblages from the upper levels at Long Creek in his Mortlach Complex which also includes the late materials from Shippee Canyon in

Montana and the Morkin site in Alberta. The Fall River Complex here is separated from the Mortlach Complex by the absence of check-stamping and because of apparent ties with Middle Missouri ceramics.

The other occupation (Level #3, Area S) containing the Blackduck vessel may be a Prairie Side-Notched level but it also contains several later vessel styles. These vessels are very similar to the Talking Crow vessels from the McClure site in South Dakota (Johnston 1982). The possibility exists that this level may be a mixed component, as no separation of these ceramics was apparent. The presence of Blackduck in the Parklands is not unusual as it appears at the Stott site (DlMa-1) in southwestern Manitoba; however, it is rare in southern Saskatchewan.

While some of the Late Plains and Prairie Side-Notched materials have been disturbed, they will add some knowledge to a poorly understood period in Saskatchewan's prehistory.

3.6 Summary

The prehistory of the Qu'Appelle River Valley encompasses almost all known periods of southern Saskatchewan prehistory. There is evidence that the Qu'Appelle Valley was inhabited between 8600 and 9000 years B.P. by peoples of the Cody Complex. Although evidence is, as yet, lacking, it is conceivable that the valley or valley rim may have been inhabited as much as 2000 years earlier. This habitation probably continued without major interruption until the

coming of the Europeans in the 18th Century. Several changes in climate and vegetation may have altered the lifestyles and livelihoods of the valley's inhabitants over the centuries as they exploited the wide range of fauna and flora which the Qu'Appelle Valley offered.

To date, very little detailed archaeological work has been undertaken, but it would appear that the Late Plains Indian Period was the era during which populations were greatest in the Qu'Appelle Valley. While it may be years before an acceptable chronology for the Qu'Appelle River Valley is worked out, it is undoubtedly one of the richest archaeological areas of Saskatchewan.

4.0 RESEARCH GOALS AND METHODOLOGY

4.1 Introduction

The initial research goals for the Lebret site archaeological project were mainly focussed on the establishment of a cultural historical reconstruction. As the project developed, these goals and the methodology employed were modified in order to accommodate the concerns of the development agencies responsible for highway and cottage construction. This chapter provides an account of the research goals and methodologies used in each area of the site as the project developed.

4.2 Research Goals and Data Retrieval in Area A (1984)

The initial research goals in the fall of 1984 were simply exploratory. The archaeological discoveries in the excavated basement of a cottage on Lot 4, Block 7 (Area R) on the northwest shore of Katepwa Lake in June of 1984 prompted the need for an assessment of the area slated for road construction to the west (Area A) (Figure 2.3). The objectives for the initial investigations of Area A in 1984 were:

(1) to determine the extent and nature of archaeological deposits along the proposed roadway and upgrading of the small bridge that crossed the Qu'Appelle River west of the LaRocque Estates cottage development site where archaeological deposits had previously been identified;

(2) to propose the appropriate conservation and

mitigation procedures for any archaeological deposits found within Area A.

The 1984 field investigations took place over two weekends in September. During the first weekend field methods consisted of surface inspecting a dirt road running parallel to the Qu'Appelle River across the site area (Figure 2.3). Two parallel lines of test units composing 21 50 x 50 cm wide test units were excavated between 40 to 60 cm deep, depending on soil and moisture conditions. These two lines were 10 m apart and the test units were at approximate 10 m intervals along each line (wherever large trees and dense brush allowed). Soil conditions were noted and artifacts were collected and labelled as to depth of occurrence. A 1 x 1 m excavation unit, A-1, was then excavated in natural layers to a depth of 65 cm. The stratigraphy was determined by cleaning and examining the profile of an old outhouse hole immediately to the west of Unit A-1. The location of Unit A-1 was chosen due to the relative richness of cultural materials recovered in nearby 50 x 50 cm test units and by the large number of artifacts observed eroding out of the walls of the outhouse depression walls. This location was to receive the largest impact from the proposed road construction.

The following weekend, a further 1 x 1 m unit, A-1, was excavated immediately south of Unit A-2, and a 1 x 50 cm unit, A-3, was placed immediately to the west of Unit A-2.

Unit A-2 was excavated to a depth of 70 cm below surface where a sterile grey sand layer was encountered. Unit A-3 was only excavated to a depth of 55 cm below surface due to time constraints.

Based on the finds from Area A, Units 1-3, a five level cultural sequence was proposed (Walker and Smith 1985: 19) for the Lebret site. Artifacts were recovered from the very recent 1950's, an historic Metis occupation, a Late Plains Indian Period occupation, an Avonlea occupation and an unidentified prehistoric occupation below the Avonlea level. (This latter level was later identified as a Sandy Creek occupation). In terms of the faunal assemblage, the recoveries were so unusual for a Northern Grasslands/Parkland site that it was decided that the author should return in the spring of 1985 if the proposed road construction had not taken place.

The general research goals for the 1985 field season were primarily guided by:

a) the nature of the threatening and on-going development connected with the proposed highway construction primarily affecting the western portion of the site: Area A, and on-going cottage lot development primarily affecting the eastern portions of the site: Areas B, R, and S;

b) the need to expand an inadequate data base for use in site and regional cultural historical interpretation.

The strategies chosen to attain the research goals

became subject to the above guiding factors and understandably in some cases, the retrieval of data involved a trade-off between idealized strategies and the actual methods necessary to cope with the field situation.

4.3 Research Goals and Data Retrieval in Area A (1985)

Construction of the proposed road in Area A was delayed, not by archaeological concerns, but by private concerns of the contractor hired to build the road for the Rural Municipality of North Qu'Appelle. The author was granted permission to continue excavations in Area A early in the spring of 1985 on the understanding that road construction might begin without notice at any time.

The 1985 research goals for Area A (Smith 1986) were:

a) to expand the initial excavation area that was excavated in September of 1984 with the express cultural historical objectives of:

i) expanding the current knowledge of the previously-recorded historic and prehistoric occupations recorded by Walker and Smith (1985) by expanding the data base as described below;

ii) specifically retrieving materials suitable for radiocarbon dating in order to place the cultural horizons in a temporal framework;

iii) specifically expanding the data base faunal sample because of its apparent unique nature - that of a typical Plains/Parkland Complex in a Plains/Parkland setting

apparently relying heavily upon fishing rather than large mammals;

iv) specifically attempting to obtain diagnostic artifacts such as ceramics or projectile points from the Unknown Prehistoric Level #4.

The strategy in Area A involved expanding the excavation area before continued road construction covered the major excavation area of Units 1, 2, and 3. This involved opening up excavation units immediately adjacent to the existing units so excavation procedures would be consistent and stratigraphy known. Between April 18, 1985 and April 29, 1985, the major excavation units were expanded. On June 25, 1985, however, a base line was established 15 m to the north of the northeast corner of A-7. This base line extended eastward along the river flat some 130 m, insuring that future test pits or excavation units could be tied in exactly to Area A, Units 1-8.

Excavation proceeded by enlarging the initial 2.5 square m (Figure 4.1) removed in September, 1984 to a total of 7.5 square m. Excavation methods continued as in 1984, with each natural layer removed in arbitrary levels of 5 cm. This approach was chosen since there was often no way to determine changes in cultural stratigraphy visually. This method was particularly useful since it allowed more precise vertical control within a very thick occupied stratum or even thick non-cultural layers. Excavation proceeded in 1 x 1 m

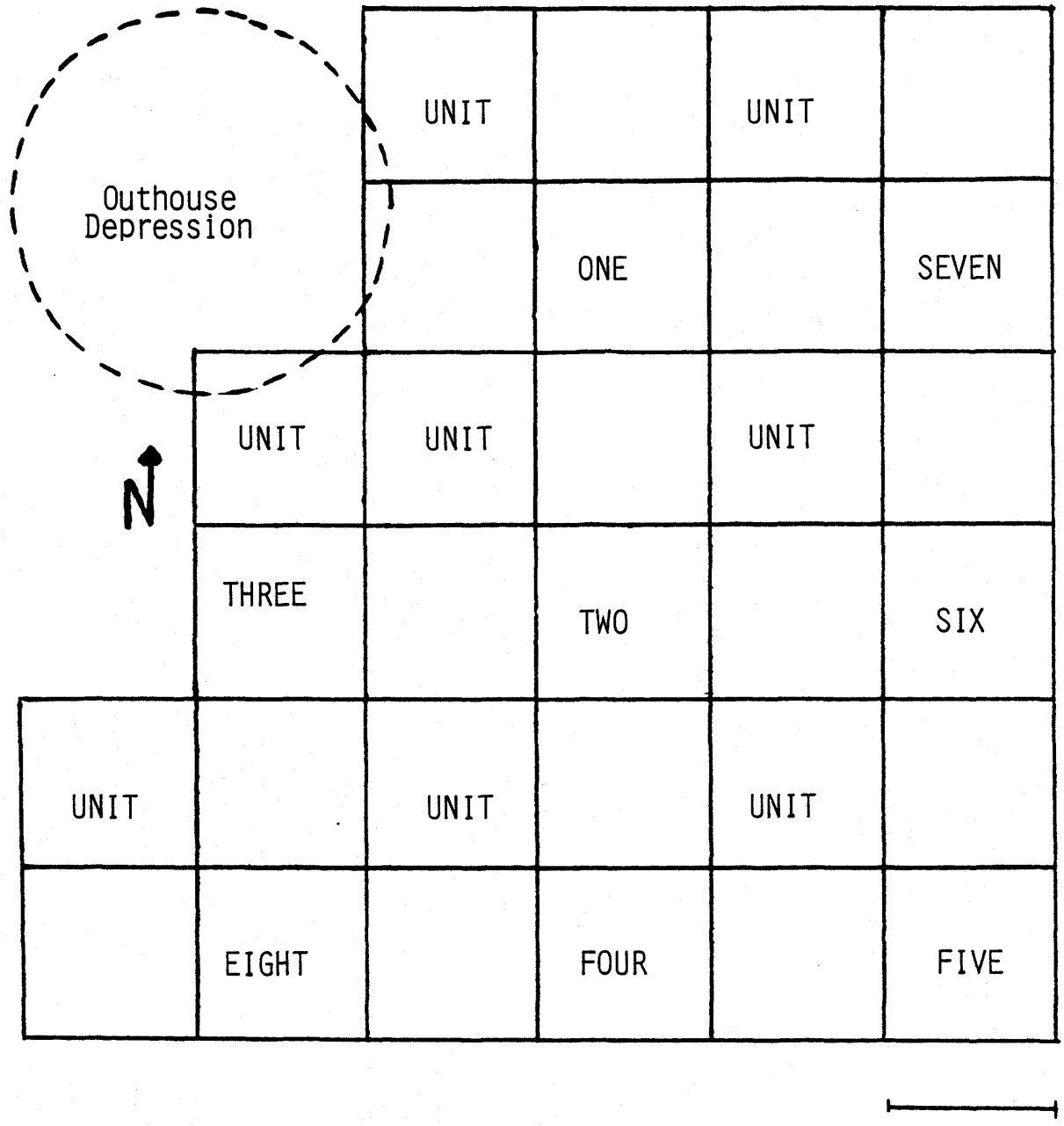


Figure 4.1: Area A Excavation Units

units, divided up into 50 cm quadrants. All earth was hand-screened through 1/4 inch mesh screens (or approximately 6 mm mesh) or 5.0 mm mesh, depending on the nature of the occupation and the soil conditions. Matrix samples were taken in quantity from hearth areas or from areas with visibly dense concentrations of cultural debris.

Cultural features were mapped by one meter squares, and photographed using either black-and-white print film, or colour slide film, or both. All cultural material encountered was saved for identification and analysis. Fire-cracked rock was also mapped and saved. Once a unit was completed, profiles of walls were drawn and photographed. Soil and pigment samples were saved, along with charcoal and bone, for the specific purpose of radiocarbon dating.

Although road construction in this area did not begin until early July, construction crews were upgrading portions of Highway 56 above to the south and along the road north of the Qu'Appelle River while the author was working in Area A during April. Since road work was slated to disturb the site in a matter of days, steps were taken to streamline the excavation methods. It was decided, first, that since there were two discrete, undisturbed occupations present, they would be concentrated on and no search for new deeper levels would be attempted. Second, only the most unusual and notable features would be mapped and photographed, but larger, unassociated items would not be. It was decided,

under the apparent time limitations, that a 50 x 50 x 5 cm provenience was adequate control. As it turned out, more time could have been spent on the excavation in Area A and as a result, the data has suffered slightly due to the procedures implemented, however, perhaps this is compensated by a larger data set.

Actual excavation proceeded according to the conditions of the cultural deposits encountered. When it was appropriate, a square-nosed shovel was employed. Finer work utilized mason's trowels, stair brushes, paint brushes, grapefruit knives, teaspoons and a complete set of dental picks. Depths below surface were generally taken at the northwest (NW) or southwest (SW) corners of the 1 x 1 m excavation units and recorded on level forms.

As previously mentioned, all soil was screened through various sizes of mesh according to the deposits encountered. All ordinary earth removed during the course of excavation was passed through a 1/4 inch (approximately 6 mm) mesh screen if it was clear that the soil consistency made screening difficult or if the area was clearly disturbed, such as in the cultivated plough zone layer. When dealing with the heavily occupied cultural areas of a unit, a smaller size mesh (approximately 5 mm) with a thicker wire was used in order to recover the smaller items. This screen, although only slightly finer than the first, allowed for good recovery of small mammal, bird and fish remains (especially fish

scales). When a dense area of cultural debris was encountered, such as a mass of fish bones and scales or a multitude of lithic chipping detritus, the soil was bagged, labelled and put aside until such a time as water screening was possible. Water screening involved placing the matrix in a window screen mesh box (approximately 2.5 mm mesh), and running water through it to remove the soil. The cultural material from this process was then allowed to dry and packed for sorting at a later date. This method of collection allowed for recovery of very fine cultural debris not normally collected by even 5 mm mesh, thus expanding the data base considerably.

Organic samples, such as bone, carbonaceous soil, and charcoal to be used for radiocarbon dating, were also collected. These materials were packed in air-tight plastic zip-lock bags, and labels were attached to avoid contamination. The faunal samples were washed as soon as possible, allowed to dry and re-packed to avoid contamination. At no time was a sample allowed to sit in the open for longer than was necessary to dry it, and exposure to the direct sunlight was also avoided. These steps were taken to prevent erroneous dates due to contamination.

Excavated artifacts of bone, lithic, ceramic, shell or other similar types were collected by excavation unit, bagged and labelled by 50 x 50 cm quadrant, cultural level, and arbitrary 5 cm level. Fire-cracked rock was also similarly

collected, but kept separate from the other artifactual material to avoid damage by crushing or breakage. Particularly delicate materials were placed in vials for better protection.

During excavation, stratigraphic information was recorded on level forms and changes in cultural material and soil deposition were described. Upon completion of an excavation unit, wall profiles were drawn to scale, with the aid of line levels, string and plumb-bob. Generally, after the profile was drawn, a black-and-white photograph or colour slide (or both) were taken of the wall profile. cottages

4.4 Research Goals and Data Retrieval in Area B (1985)

Area B is located on the LaRocque Estates Properties and, in 1985 was privately owned. The landowners, Mr. Karl Gauer and Mr. Rudolf Kraft, gave their permission to carry out excavations in certain areas of their property. Water-front areas were considered inaccessible as the owners feared that water might settle in low-lying areas created by the excavation units thus diminishing the re-sale value of the property. The author complied with these requests, and excavations began in Area B (Figure 4.2) on June 26, 1985.

Research goals in Area B were expressly cultural historical and designed to:

i) expand the current scanty knowledge of the eastern end of the Lebret site. This area, on the western shore of Katepwa Lake, had yielded numerous artifacts in the

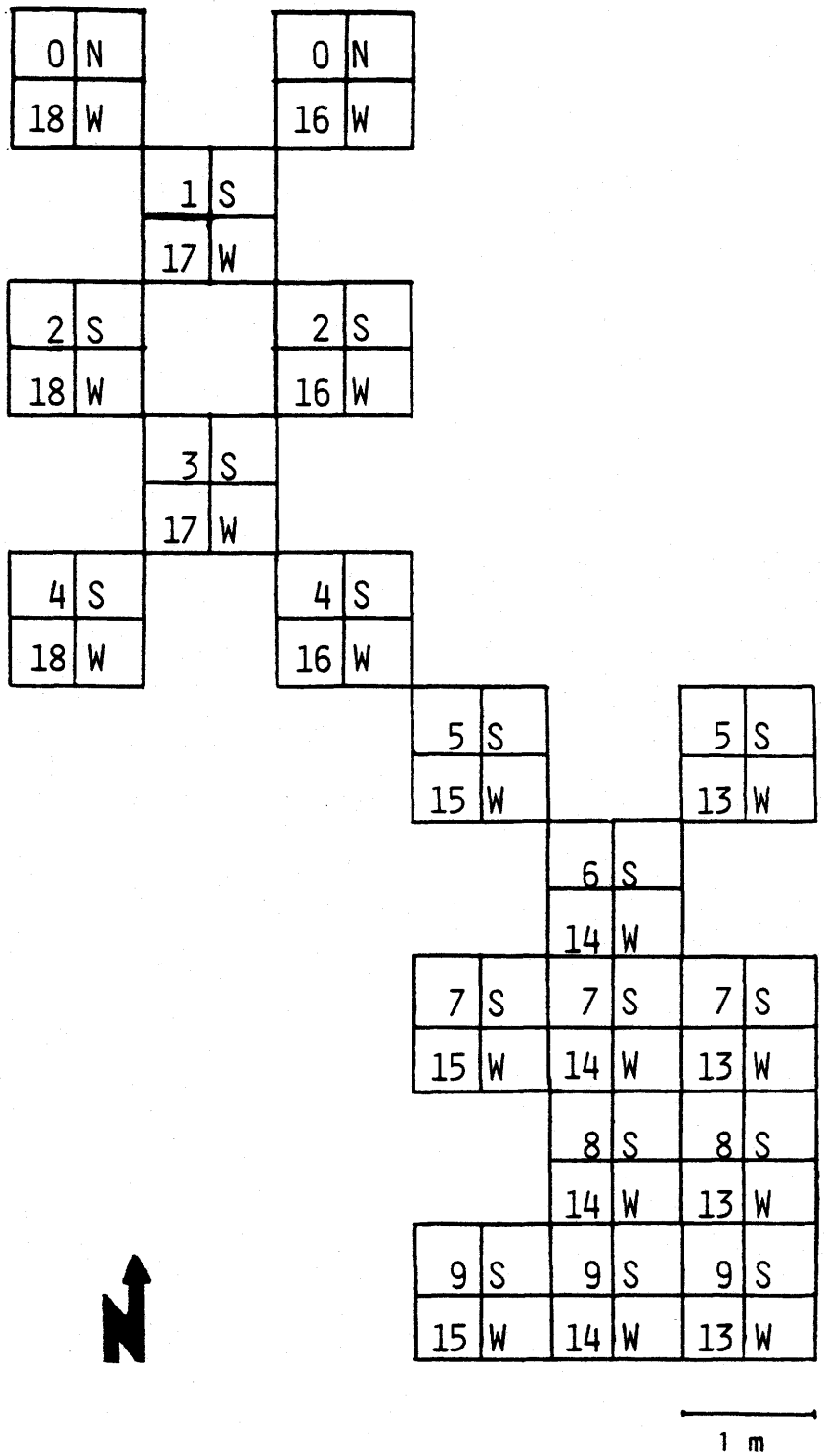


Figure 4.2: Area B Excavation Units

course of salvage/monitoring by a crew from the Archaeological Resource Management Section, Heritage Resources Branch, Saskatchewan Culture and Recreation in June, 1984. This work was related to a cottage basement excavation in nearby Block 7, Lot 4 (Area R) (Figure 2.3);

ii) determine if, in fact, the occupation sequence witnessed during the September, 1984 and April, 1985 excavations of Area A were continuous over the entire river flat, or at least repeated in Area B;

iii) determine the cultural sequence at the Lebret site by more careful, less salvage-oriented archaeological methods and recording stratigraphic sequences and levels of cultural occupation in a tightly controlled manner over a wider area than was available in Area A;

iv) collect samples and artifacts that would be useful for placing the occupation sequences in a time/space context, thus contributing to the establishment of a regional chronology for the Qu'Appelle Valley.

Our strategy in Area B involved opening up an excavation area that could be tightly controlled as compared to the other areas (Areas R, A and S). This area, although slated for development, was not immediately threatened by construction projects. The specific strategy involved collecting all possible information even if it could not be used in the course of this current research. That this information should be available and useful to future

researchers guided much of the research strategy in Area B.

Area B units were excavated in natural layers. These layers were subdivided into 5 cm arbitrary levels where appropriate. Other excavation procedures were the same as those described for Area A. During the excavation of Area B, salvage projects were run at two other areas of the Lebret site. Area R involved the excavation of a septic tank hole by the archaeological crew and subsequently by a backhoe. As mentioned previously, due to the rough salvage nature of this excavation in Area R, the data is not included in this thesis. In another area, Area S, there were far fewer complications associated with the salvage excavations and the extra time that was allowed by the landowner, Mr. Reg Skinner, enabled a set of research goals and strategies to be developed.

4.5 Research Goals and Data Retrieval in Area S (1985)

Research goals for Area S were:

a) to expand upon the artifactual recoveries adjacent to Areas B and R; and,

b) to salvage a sample of the area that was to be impacted when mechanical excavation for a basement in early September, 1985 took place.

The above goals were implemented with the specific objectives of:

i) determining if the very Late Prehistoric cultural sequence, obliterated in Areas A, B and R by a

cultivated plough zone horizon was, in fact, intact in this more peripheral area of the site;

ii) expanding upon the cultural sequence which was only marginally obtained in Area R due to the rushed conditions under which the resultant salvage activities took place.

Research strategy in Area S involved opening an excavation within the area slated for a basement excavation (Figure 4.3) with the express permission of the landowner. Since the depth of the basement excavation was known, and the lack of information in the other areas was greatest in the upper levels previously disturbed by cultivation, it was decided that a large area but shallow excavation would be attempted - particularly if it was discovered that the upper levels were indeed intact. The decision to excavate only to to the depth of the future the basement was also in accordance with the landowner's wishes. Since there was no form basement to be poured, the lower levels in Area S are now effectively capped, preserved, and protected by the construction of Mr. Skinner's cottage.

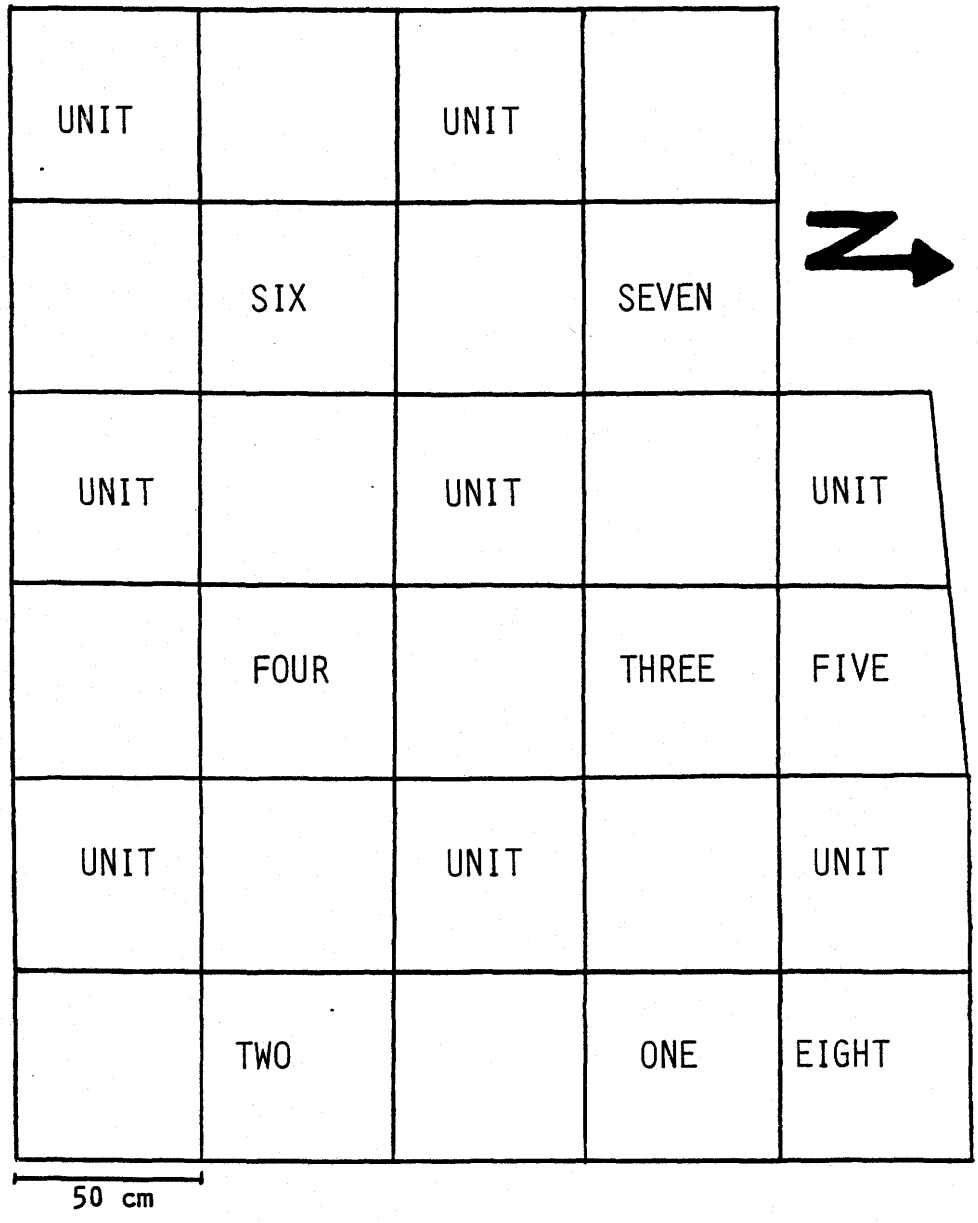


Figure 4.3: Area S Excavation Units

5.0 STRATIGRAPHY AND DATING OF THE LEBRET SITE

5.1 Introduction

In order to determine the sequence of both cultural and geological events at the Lebret site, careful stratigraphic records were kept during excavation. After a unit was excavated, line drawings were made and photographs were taken of the wall profiles. The contents of each natural layer and cultural level were noted. In the spring and winter of 1985 and in the spring of 1986 samples of charcoal and bone from the cultural levels were submitted to the Saskatchewan Research Council Radiocarbon Dating Laboratory in Saskatoon. The resulting dates were used to place the various cultural levels and associated artifacts from the Lebret site in a time frame sequence to determine the age of each cultural occupation. The following contains an outline of each area's stratigraphic and cultural sequence, as well as the results of the radiocarbon dating for each cultural level.

5.2 Geological Process of the Lebret site Stratification

The materials creating the stratification for at least the last 2000 to 2500 years in most of the excavated areas at the Lebret site were deposited in the process of the slope reaching its equilibrium. These slopewash deposits created much of the sterile gravel and sand layers separating the upper Late Plains Indian Period occupations. Only in Area B and Area R is there evidence for alluvial deposition of flood

silts and clay deposits. In Area R these deposits are associated with the earliest cultural occupations dating prior to 2000 years B.P. and in Area B, prior to 2000 to 2500 years B.P. In Area B there is also evidence of a higher level of Katepwa Lake (c. 3000 - 4000 B.P.). This is evidenced in the north wall profile of Area B, Units 7S 13W and 7S 14W, where a large clay and gravel feature, oriented slightly northeast to southwest, was encountered in the floors of those units that were excavated down to sterile deposits. This feature appears to be an "ice push" (or a ridge of gravel, sand and clay) created by ice jamming against the shoreline. Ice pushes around present-day Katepwa Lake are located a meter or so away from the edge of the lake. If this excavated feature is an ice push, then some time around 3500 years B.P., the shoreline of Katepwa Lake was probably no more than a few meters to the east of the Area B excavation units.

The earliest cultural deposits in Area B, then, were likely closer to the water's edge until Katepwa Lake shrank to approximately its present size. At this time, even spring floods would not have inundated and subsequently deposited silts on the southwest shores of Katepwa Lake. The earliest archaeological deposits, of course, would be subjected at first to silting from both lake and riverine floods, as well as to slopewash deposition. Once the lake began to recede, the majority of deposition would become primarily slopewash.

It is likely that this change in depositional processes occurred at different times in different areas of the site. The transition to a situation of totally slopewash deposition occurred some time prior to 2500 years B.P. in Areas A and B, and around 2000 years B.P. in Area R. In Area S the nature of the deposition is not known prior to 1500 years B.P., by which time slopewash is the only agent of deposition in Area S. Very likely, based on its close proximity to Area R, Area S was subject to flooding until around 2000 B.P.

It is apparent that depositional processes have been gentle and gradual, but continuous, over time at the Lebret site. The slower deposition, as the slope matured and flooding became less frequent to non-existent after 2500 to 2000 years B.P., is witnessed in the generally thicker organic horizons that are associated with the Late Plains Indian Period at the site. Most notable is the horizon associated with the Avonlea component in Area A and also in Area B. These paleosols are considerably thicker than the rest, and are both situated between two distinct gravel and sand slopewash layers (Figures 5.1 and 5.2). The gradual nature of this deposition is documented in the number of buried intact features encountered at all areas of the site. Several large ash-filled hearths, most notably in Area A and Area S, were exposed during excavation. Two large ash-filled hearths were also uncovered when the backhoe expanded the excavation in Area R for the septic tank installation. Also,

South Wall Profile of Unit 6, Area A, EeMw-26

East Wall Profile of Unit 4, Area A, EeMw-26

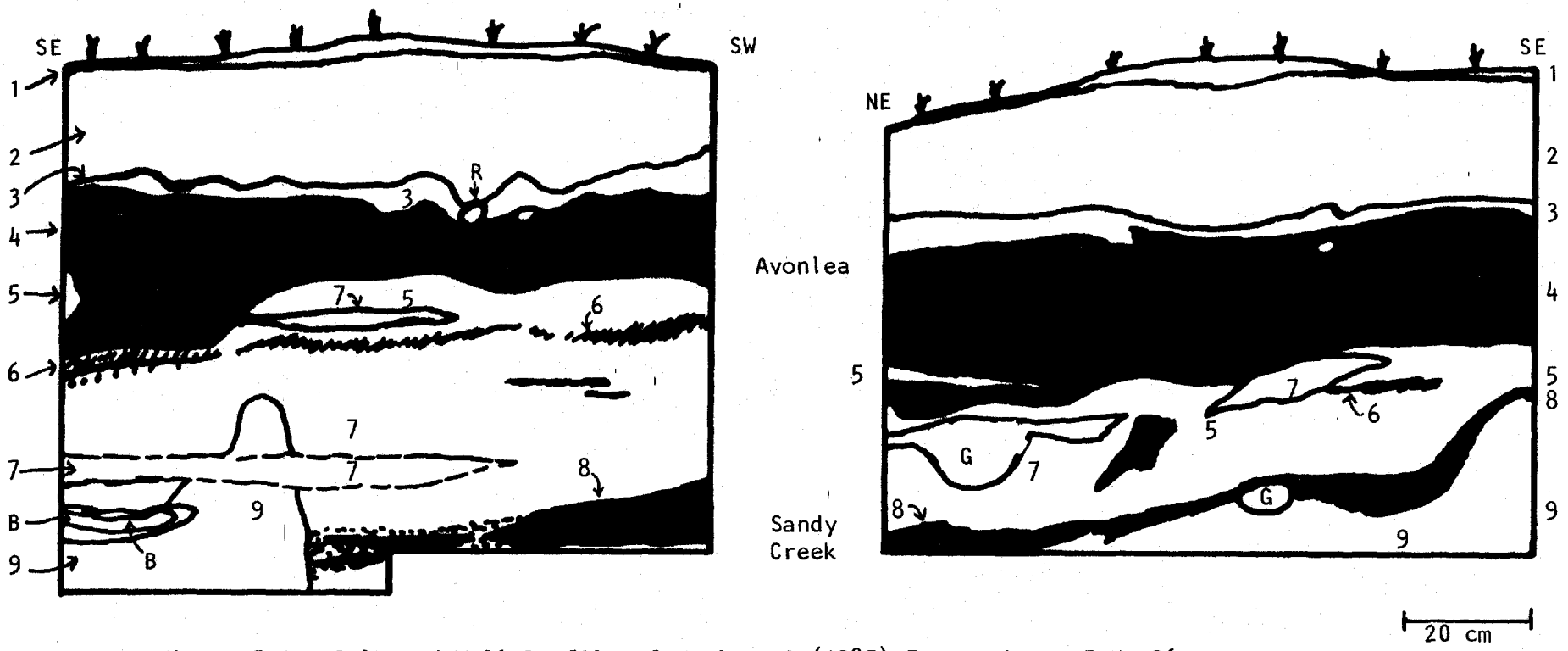


Figure 5.1: Selected Wall Profiles from Area A (1985) Excavations, EeMw-26.

1 - Ah: Sod and Leaf litter mat
2 - Cultivated Plough Zone
3 - Sand and Gravel Slopewash
4 - Ab: Avonlea Occupation
5 - Sand and Gravel Slopewash
6 - Bh "Ghost" Paleosol, No apparent occupation
7 - Gravel Slopewash lens
8 - Ab: Sandy Creek Occupation
B - Burned soil and ash smears associated with Sandy Creek occupation
9 - Grey clay layer to end of excavation
G - Gopher disturbance area
R - Tree root

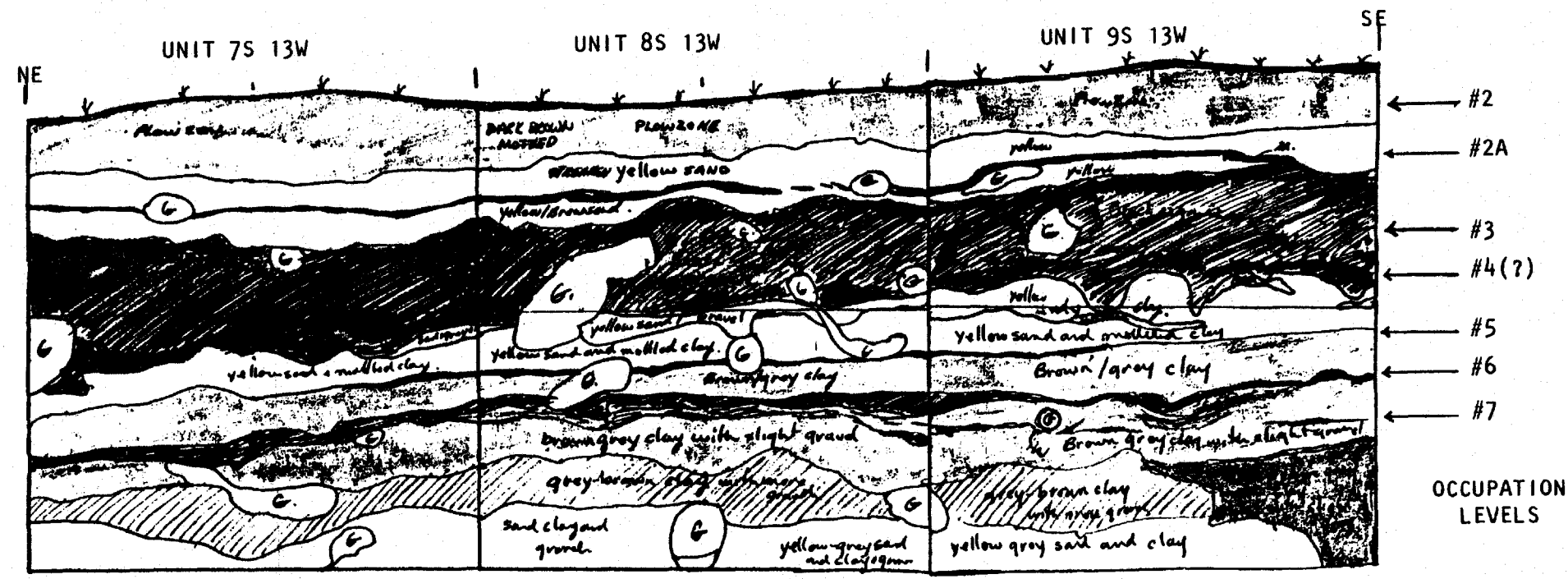


Figure 5.2: East Wall Profile of Area B Excavation Units

#2 - Late Prairie or Plains Side-Notched
#2A - Prairie Side-Notched
#3 - Avonlea
#4(?) - Possible Occupation
#5 - Possible Besant(?)
#6 - Sandy Creek
#7 - Unknown
G - Gopher Disturbance

very few artifactual materials were encountered in positions that would suggest a violent or rapid burial associated with forced downslope movement. In particular, the remains of lightweight or small materials, such as minute fish bones or fish scales in the occupation levels, suggest a gentle burial. The particle size of the sterile layers is also quite small and individual pebbles ranging above 8-10 mm in diameter were rare in the areas excavated. Although it is clear that larger pebbles do occur in the immediate vicinity, these were not associated with the later cultural and non-cultural deposits. Larger pebbles seem to occur only in the very bottom layers associated with the early slope development and the old Katepwa Lake shoreline.

5.3 Area A: Stratigraphy

Area A, consisting of 1 x 1 m units A-1 through A-8 (Figure 4.1) presented few problems for stratigraphic recording. The deposits excavated are all made up of slopewash colluvium. Some tree root and gopher disturbance was evident throughout the entire area extending throughout all excavated cultural levels and natural layers. There were nine natural layers and four cultural levels recorded in all units in Area A. An example of the stratigraphy is provided in Figure 5.1. The stratigraphic sequence in Area A was consistent throughout all units. These are described as follows:

Layer 1: Sod and Leaf Litter Mat

Layer 1 was encountered in the first 2 to 5 cm of the Area A excavation. This Ah horizon was poorly developed due to the heavy forest at the Area A excavations. Abundant shade and dropped leaves hindered the growth of grass in this area preventing a thick humus layer from developing. There were few cultural items in Layer 1, and those that were recovered were very recent garbage from picnickers or fishermen.

Layer 2: Cultivated Plough Zone; Cultural Levels Numbers 1 and 2

The upper 15 to 20 cm of Area A underwent cultivation during the early 1920's. The entire Lebret flat, except for a few marginal areas (e.g., Area S), was cultivated by Metis peoples who lived on the site and maintained market gardens (J. LaRocque 1985, personal communication). Several cellar depressions still exist on the site from Metis houses that were built in the late 1800's and were largely abandoned in 1939 with the onset of the Second World War. The historic materials within the mottled grey coloured plough zone layer consist of Metis-related artifacts dating to the late 1800's and into the 1920's and 1930's (Walker and Smith 1985:19-20). These materials are assigned to cultural Level #1. Cultural Level #2 is arbitrarily assigned, as it is also contained within the disturbed plough zone. The remains from the latter level relate to a Late Period Prehistoric occupation, or possibly a series of Late Prehistoric occupations. The artifactual material found associated with this level date to

the pre-contact era, roughly estimated to be within the last 1000 to 300 years B.P. The plough zone consists of a mixture of silts and sandy gravel. This layer is important for two reasons. First, by mixing it reduces the amount of information available for the Late Plains period occupation across the Lebret site. Second, once the area was stripped of its vegetation and cultivated, ground squirrels moved into the area and proceeded to tunnel through the plough zone and into the lower layers. Ground squirrels are also present in non-cultivated areas, but are less numerous. Obviously, the broken surface was attractive to these animals. Consequently, rodent bioturbation was a major problem in excavations in Area A, as well as Areas B and R.

Layer 3: Sand and Gravel Slopewash

Layer 3 is a light yellow-coloured sand and gravel slopewash layer containing a mixture of small stones and coarse sand roughly occurring between 15 and 25 cm below the surface. Layer 3 is consistent in all Area A units ranging from 2 to 8 cm in thickness. This layer is found directly beneath the plough zone layer, is devoid of cultural materials, and may have been even thicker before the area was cultivated.

Layer 4: Ab, Dark Brown Paleosol; Cultural Level Number 3, Avonlea Complex occupation

Layer 4, cultural Level #3, the Avonlea Complex occupation is a thick, dark brown, buried humus horizon. Layer 4 varies in thickness between 15 to 30 cm, and is

generally found between 25 and 55 cm below the surface. This layer is disturbed in places by both rodent burrows and tree roots, but is fairly consistent and easily identified across Area A. The cultural material assignable to the Avonlea Complex generally occurs in the top to middle portions of the paleosol, suggesting that much of the lower dark staining in the profile is a result of leaching downwards. While this is quite a thick occupation level and natural layer, the concentration of artifacts within a 15 cm band in the paleosol suggests a single occupation, but may also represent two closely spaced Avonlea occupations. No such separation was apparent in Area A, however, and the diagnostics recovered were consistently Avonlea. A large basin-shaped hearth feature in A-1 also suggests a single Avonlea occupation in Layer 4.

Layer 5: Sand and Gravel Slopewash

Layer 5 occurs directly below Layer 4. The separation between Layer 4 and Layer 5 is not always apparent visually because, as previously mentioned, some organic materials associated with Layer 4 have leached down into Layer 5. Layer 5 is distinct in that, like Layer 3, it is light yellow in colour and made up of coarse sand and gravel deposits. Unlike Layer 3, however, Layer 5 contains several gravel slopewash lenses (Layer 7) that are fairly coarse in nature and probably reflect more rapid episodes of water erosion during its formation. Layer 5 is more inconsistent in terms

of thickness, ranging from only a few centimeters to almost 30 cm in thickness. Layer 5 is also bisected by an intermittent "Ghost" Paleosol referred to as Layer 6.

Layer 6: Ah Intermittent Light Brown "Ghost" Paleosol

Layer 6 is a patchy buried humus horizon that is referred to as a "ghost" paleosol because of the way it fades in and out in the wall profiles and excavation floors. Likely, it originally was a thin but consistent humus layer, but has since undergone erosion and suffered from root and other disturbance factors. Layer 6 may at one time have separated Layer 5 into two gravel and sand slopewash layers, but in Area A this is no longer clearly apparent. Layer 6 is also devoid of cultural materials.

Layer 7: Intermittent Gravel Lens

Layer 7 is found throughout much of Layer 5. It is characterized by larger-sized gravel particles that may relate to slopewash associated with heavy runoff. Layer 7 is not consistently present in the Area A units.

Layer 8: Ab Dark Brown Paleosol; Cultural Level #4,: Sandy Creek Complex occupation

Layer 8 is a fairly consistent buried humus layer containing the Sandy Creek Complex materials. It also has suffered slightly from root and rodent disturbance as have all the other layers in Area A. Level #4 is well separated from the upper cultural levels and mixing is not apparent. This layer generally occurs between 60 and 70 cm below the surface and varies from 4 to 10 cm in thickness with the

cultural materials distributed consistently throughout the layer. Slight undulation suggests a slightly uneven original land surface in this area.

Layer 9: Grey Clay and Gravel

Layer 9 is the final layer excavated in Area A. It is composed of grey-coloured clay and gravel and may have been deposited by flooding of the river flat, although this is uncertain. This layer is slightly different from the upper gravel slopewash deposits in that it contains clay, coarse sand, and fine gravel. No cultural materials were recovered in Layer 9 and its thickness is unknown. It is generally uneven and in one area recorded in the south wall profile of unit A-6 (Figure 5.1), a mound of this clay, sand and gravel is present. This may represent the remnants of an ice push that was subsequently eroded. If this is the remains of an ice push feature, it provides evidence that the river or even the shore of Mission Lake (now located some 40 m to the northwest of Area A) was higher at this time. No excavations were taken below the culturally sterile Layer 9 due to time constraints.

5.4 Area A: Radiocarbon Dating

Two radiocarbon dates were taken for Area A. One was obtained from Unit A-5, cultural Level #3 and was composed of bison bone. This sample was in excellent context, directly associated with a small side-notched Avonlea projectile point. A date of 1260 +/- 115 years B.P. (S-2691) or an

uncorrected date of A.D. 690, was obtained. This date is well within the accepted time range of the Avonlea Complex.

A second date was also obtained from bison bone recovered from cultural Level #4. The sample was taken from Unit A-4 and was directly associated with a medium-sized, side-notched Sandy Creek projectile point. A date of 2980 +/- 105 years B.P. (S-2791), or an uncorrected date of 930 B.C., was obtained. This date is generally earlier than other Sandy Creek dates (e.g., Dyck 1983:109), but little is known about this complex and it is possible that it has a longer time span than is presently known.

5.5 Area B: Stratigraphy

The Area B stratigraphy is determined from the east wall profile of Units 7S 13W; 8S 13W; and 9S 13W (Figure 5.2). These units were excavated to sterile deposits in Area B and likely best represent the stratigraphic sequence for the Lebret site in terms of clarity and separation of layers. There are a total of seven occupation levels with a possible eighth occupation level being present; however the latter is very poorly represented in this area. These seven occupation levels are included in a stratigraphic sequence of 15 natural layers. The stratigraphic sequence for Area B is described as follows:

Layer 1: Sod and Cultivated Plough Zone; Cultural Occupations Level #1 and Level #2

As in Area A, the first two cultural levels are arbitrarily assigned as Level #1 and Level #2, representing

an historic Metis occupation and one or more Late Plains Indian Period occupations that were also disturbed and mixed when this area was cultivated in the course of Metis market gardening. The mottled grey-brown plough zone layer ranges from 15 to 18 cm below surface in Area B. It is more compact than Layer 1 in Area A.

Layer 2: Sand and Gravel Slopewash

Beneath the plough zone is a yellow-brown sand and small-grained gravel layer that is culturally sterile. This is a homogenous sand and gravel slopewash layer very similar to Layer 2 in Area A.

Layer 3: Ab Dark Brown Paleosol; Cultural Level #2A: Prairie Side-Notched

Cultural Level #2A is contained within Layer 3, a thin brown paleosol that seldom exceeds 3 to 4 cm in thickness. Prairie Side-Notched period artifacts were found in this level. This occupation level, while it shows up well separated in these units (Figure 5.2), several meters to the north is obliterated by the plough zone. Obviously, areas further downslope (i.e., north) did not receive as much depositional materials and Level #2A was too near the surface to escape the plough. In the intact areas, Level #2A occurs between 20 and 24 cm below the surface. In some areas this paleosol dips down towards Layer 5 making separation between Level #2A and Level #3 difficult (such as in the SE corner of Unit 9S 13W).

Layer 4: Sand and Gravel Slopewash

Layer 4 is directly beneath Level #2A, separating this cultural level from the next level below. It is identical in colour and makeup to Layer 2, suggesting a similar depositional history. This layer varies in thickness over the area excavated.

Layer 5: AB Dark Brown Paleosol; Cultural Level #3,: Avonlea

Layer 5, Level #3, containing the Avonlea occupation, is the thickest culture-bearing paleosol in Area B. Layer 5 occurs at a depth of 28 to 30 cm below surface, and is generally 15 to 25 cm thick across all of Area B. The cultural materials are concentrated in the upper 10 to 15 cm of this level and are uniform throughout. It appeared possible that this thick paleosol represented two closely-spaced, but separate, Avonlea occupations; however, the distribution of artifacts vertically provides evidence that this was a single Avonlea occupation. It is also likely that this Avonlea occupation is the same as that in Area A.

Layer 6: Silty Sand and Gravel Slopewash

Layer 6 is another yellow sand and gravel slopewash layer that also contains a higher silt content than Layers 2 and 4. While this layer appears relatively thin in profile, it has had some organic staining in its upper portion as a result of leaching from Layer 5. Layer 6 is culturally sterile.

Layer 7: Ah Intermittent Light Brown "Ghost" Paleosol; Cultural Level #4?

Contained within Layers 6 and 8 is a light brown patchy paleosol. This is termed a "ghost" paleosol because the layer is not consistent, tending to fade in and out in the floors and wall profiles. Very little cultural material was recovered from this paleosol, comparable to the amount of cultural material found in the slopewash layers and attributed to rodent activity. Layer 7 is best represented in Unit 9S 13W, but completely disappears in the more northern units (e.g., 7S 13W). This does not appear to be a cultural level.

Layer 8: Silty Sand and Gravel Slopewash

Layer 8 is very similar in colour and content to Layer 6. When Layer 7 is not apparent, there is no distinguishable separation between Layers 6 and 8. Layer 8 is also culturally sterile and is slightly thicker than Layer 6.

Layer 9: Ab Dark Brown Paleosol; Unknown Cultural Level #5

Layer 9 is a fairly consistent paleosol occurring at 55 to 60 cm below the surface. It is a dark brown silt and sand level with a moderate amount of cultural material, but contains no culturally diagnostic items. It is fairly thin, ranging from 2 to 4 cm in thickness. Given the relative position of this occupation, it may be a Besant occupation.

Layer 10: Brown/Grey-Silty Clay and Gravel

Layer 10 is a culturally sterile layer with a larger

clay content than any of the previous layers. This likely represents the last flood episode resulting in the deposition of overbank deposits. Layer 10 is consistent, occurring at a depth of 60 to 65 cm below the surface. It ranges between 5 and 8 cm in thickness.

Layer 11: Ab Dark Brown Paleosol; Sandy Creek Cultural Level Occupation #6

Layer 11 is a distinct, well defined and consistent paleosol which occurs between 66 and 72 cm below the surface. It is a silty paleosol quite distinct from the higher clay-content layers above and below. The artifacts associated with the level are of the Sandy Creek Complex and are evenly distributed within this thin paleosol.

Layer 12: Grey Brown Silty Clay and Gravel

Layer 12 represents a sterile layer separating cultural Levels #6 and #7. This layer ranges in thickness from 2 to 6 cm. As one proceeds deeper, the gravel content becomes higher to the bottom of the excavation. This gravelly content begins with Layer 13.

Layer 13: Ab Grey-Brown Silty Clay Paleosol: Possibly Late McKean or Pelican Lake Occupation

Layer 13 (occupation Level #7) represents the first and earliest occupation recorded at the Lebret site. It is contained within a grey-brown, silty clay paleosol that is fairly consistent over the excavated area, but not as distinct as occupation Level #6. This level may have been subjected to some damage by flooding or even ice scouring,

particularly in the southern units of Area B. No culturally diagnostic artifacts were retrieved and this level may be either a Pelican Lake occupation or a very late McKean occupation. Evidentally this occupation was quite near the shoreline of either the Qu'Appelle River or Katepwa Lake. Layer 13 is below Layer 12 and there is very little to distinguish the two except for a darkness of the clay which is associated with the cultural materials.

Layer 14: Sand and Gravel

Layer 14 represents a shoreline - most likely a lake rather than the river shoreline. It is located beneath the clay Layers 12 and 13 which contain Level #7. There are virtually no cultural materials present except for the occasional fragments of water-washed bone. This bone was probably washed down from an upper, earlier occupation not present in the units excavated in Area B to date. Contained within this layer is a distinct ice-push feature that is characteristic of the shorelines around the present-day Katepwa Lake. These ice-push features are located between 1 to 2 m of the water's edge, and are composed of sand and gravel identical to the contents of the ice-push feature in Layer 13. It is estimated that this ice-push was formed between 3500 and 4000 years ago. This appears to represent a period when the lake levels were higher than at present. This estimated date roughly coincides with the beginning of the Sub-Atlantic period which is thought to have been moister

than at present. As well, slopewash deposition was not as extensive and the river flat was likely not as developed as at present. Consequently, the lake and marsh area might have been less filled-in 3000 to 4000 years ago.

Layer 15: Homogenous Grey Sand and Gravel

This layer is considered to be sterile, and excavation stopped at this point. One unit was excavated to a depth of 130 cm with no apparent change. This represents lake bottom and shoreline deposits. All the pebbles are similar in size and are quite water-worn, suggesting they were submerged and sorted by wave action.

5.6 Area B: Radiocarbon Dating

A total of eight radiocarbon dates were obtained for the Area B occupation level. Two of the dates are rejected by the author given the position of these dates relative to the cultural stratigraphy.

Level #2A: One charcoal sample was collected from Unit 7S 14W in this Prairie Side-Notched level. A date of 725 +/- 95 years B.P. (S-2795), or an uncorrected date of A.D. 1125, was obtained. This date is acceptable for the Prairie Side-Notched period in Saskatchewan.

Level #3: One radiocarbon sample from bison bone was obtained from Unit 8S 13W. A date of 1635 +/- 105 years B.P. (S-2797), or an uncorrected date of A.D. 325, was obtained. This date is slightly earlier than the other Avonlea dates at the Lebret site, but is acceptable since it is within the range of Avonlea in southern Saskatchewan.

Level #4(?): One bison bone radiocarbon sample was obtained from Layer 6, the sand level within which this intermittent paleosol is contained. The association was poor, but as it was the only sizeable piece available, it was submitted. A date of 400 +/- 255 years B.P. (S-2801), or an uncorrected date of A.D. 1550, was obtained. This date is much too late for the stratigraphic layer from which the sample was taken. The date is rejected on the grounds that it is too late and the context of the sample was poor, possibly being the result of rodent disturbance. Indeed, the date obtained on this bone provides evidence that the cultural material in this level has been redeposited from other layers.

Level #5: One bison bone radiocarbon sample was obtained from Unit 8S 13W in this level. This level probably represents a Besant occupation. A date of 1205 +/- 100 years B.P. (S-2792), or an uncorrected date of A.D. 745, was obtained. This date is rejected by the author due to an earlier date being obtained for the stratigraphically higher Avonlea occupation. Either this date or the Avonlea date of 1635 +/- 105 years B.P. is in error. It is likely that the date for Level #5 is in error because the sample submitted was smaller than the Avonlea sample. Again, as in Level #4?, Layer 6, there was little to choose from and the sample was submitted out of necessity rather than choice. This was not the case for the Level #3 sample submitted which was larger

(J. Wittenberg 1986, personal communication). It is unfortunate that this particular date is obviously in error since there were no diagnostics from this level. A possible Besant occupation or perhaps even an early Avonlea occupation is suggested, therefore, based on the relative position stratigraphically of Level #5.

Level #6: A charcoal sample for radiocarbon dating was obtained from Unit 8S 14W in Level #6, the Sandy Creek level. A date of 2495 +/- 440 years B.P. (S-2796), or an uncorrected date of 445 B.C., was obtained. This date is slightly later than the Sandy Creek date obtained from Area A, but the two overlap at one standard deviation. This date is also closer to, but still slightly earlier than, Sandy Creek dates from elsewhere in the province.

Level #7: Three radiocarbon samples, one of charcoal, and two from bison bone, were collected from the unknown cultural Level #7. All three dates overlap at one standard deviation. The date on the charcoal is 2590 +/- 790 years B.P. (S-2794), or an uncorrected date of 540 B.C. The bison bone dates are 2585 +/- 290 years B.P. (S-2798), or an uncorrected date of 535 B.C., and 2990 +/- 115 years B.P. (S-2793), or an uncorrected date of 940 B.C. While all three of these dates are earlier than the Level #6, Sandy Creek occupation, as would be expected from their lower stratigraphic positions, they fall within the range of dates possible for four cultural complexes in southern

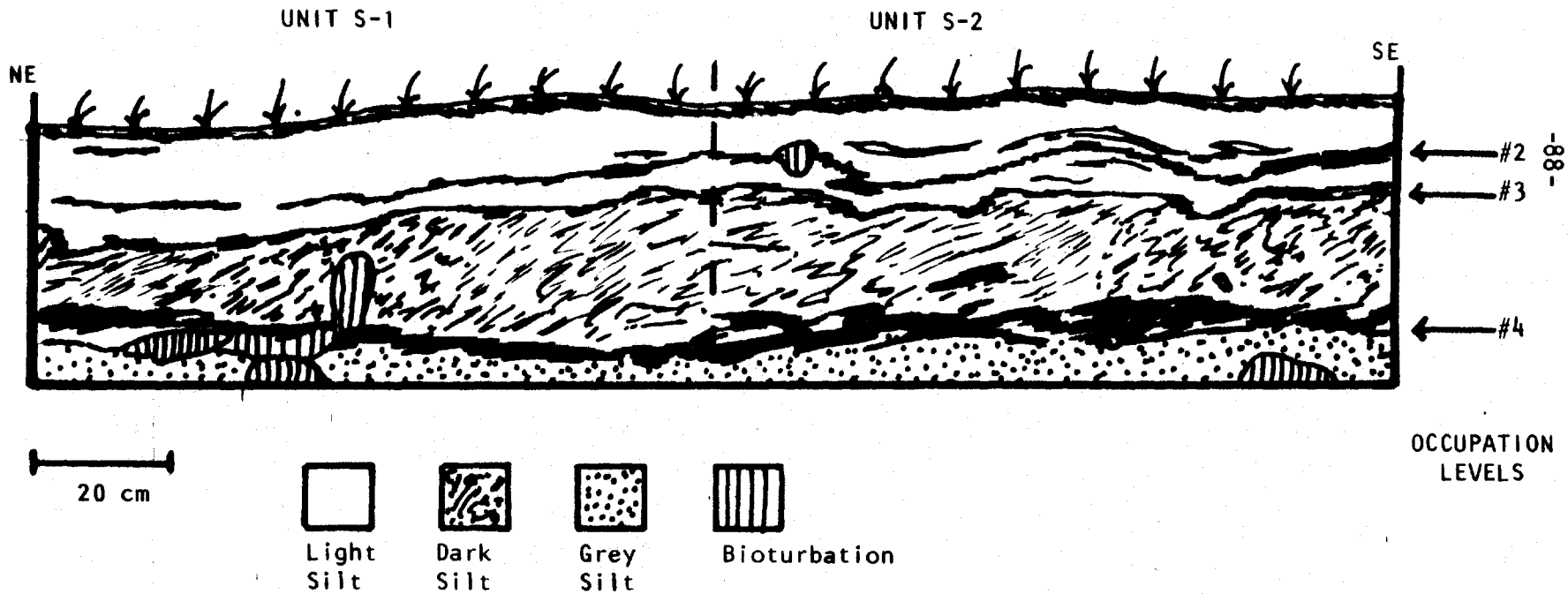
Saskatchewan: Late Oxbow, Late McKean, Pelican Lake and also Sandy Creek. Since there are no culturally diagnostic artifacts from this level at present, Level #7 may represent any one of these occupations.

The dates from Area B provides some answers but also present some questions that can only be addressed if more fieldwork is undertaken. There are very few surprises in the dating, except that the Sandy Creek levels are probably earlier than those previously recorded for this Complex elsewhere in southern Saskatchewan. More dates were not submitted for cross reference due to a lack of adequate samples in some cases, but, overall, largely due to the limited amount of funds available for radiocarbon dating. It is hoped that more funding may be obtained in the near future and additional dates obtained.

5.7 Area S: Stratigraphy

There are four cultural levels represented in Area S. The first is represented by historic materials relating to the Metis occupation of the late 1800's and early 1900's. The Level #1 historic materials do not relate to a clear paleosol but are contained in the upper 7 cm in the Area S units.

The three prehistoric levels are buried and associated with distinct paleosols (Figure 5.3). Stratigraphically, the greatest difficulty associated with Area S is that although the three prehistoric occupations show up discretely in the



#2 - Fall River
#3 - Late Prairie or Plains Side-Notched (Blackduck)
#4 - Avonlea

Figure 5.3: East Wall Profile of Area S Excavation Units

wall profile and the artifacts are concentrated around these paleosols, there is little change in soil from silts to distinct sand and gravel layers as was the case in Area B. Therefore, arbitrary 5 cm levels were employed and artifacts were assigned to cultural level by depth and frequency concentrations. Luckily, the occupations clustered at the depths of the paleosols which were obvious in the wall profiles. However, Units 3, 4, 6 and 7 contained well-defined features for Level #2 thus allowing excavation by artibrary levels within natural layers. This also aided in determining the associations of artifacts with their respective cultural levels for the remaining units in Area S. Since there was not a great deal of natural stratigraphy visible in the Area S units, only the cultural levels will be described.

Level #2: Fall River. This cultural level is probably more widely distributed across the Lebret site, but has been disturbed by cultivation in Areas A and B. The designation of this cultural level is based on similarities to materials found by Wettlaufer (1960:105) at the Long Creek site near Estevan, Saskatchewan. This cultural complex is part of the Plains Side-Notched series. The artifactual materials from this complex are found between 7 and 20 cm below the surface in Area S and likely at similar depths elsewhere - hence its frequent obliteration by cultivation.

Level #3 in Area S is slightly deeper than Level #2, its

artifactual materials being concentrated between 25 and 40 cm below the surface. The cultural remains are heavily concentrated around two features: a hearth and a fire-cracked rock feature. Level #3 is likely a Late Prairie Side-Notched level, but no projectile points of this type were recovered.

Level #4 is poorly represented in Area S and is another Avonlea level. Although no Avonlea-type projectile points were recovered, some net-impressed ceramics, similar to those recovered from Area A, were found. Level #4 is poorly represented because in the time available excavation to this depth was not possible in all Area S units.

5.8 Area S: Radiocarbon Dating

Only one radiocarbon sample (bison bone) from Area S was dated. This was not due to the lack of available samples, but to uncertainty in funding. The single date obtained is from cultural Level #4, the Avonlea level in Unit S-4. The age is 1530 +/- 105 years B.P. (S-2799) or an uncorrected date of A.D. 420. This date is slightly earlier than the Avonlea in Area A, but later than the date from Area B, suggesting that Avonlea peoples occupied the Lebret site over several hundred years.

The dating of Level #2 and Level #3 may occur. However, Level #2, based on the diagnostic artifacts is likely no older than 500 years B.P., and possibly even a little later. Wettlaufer (1960:105-107) places the Fall River Culture

around A.D. 1600 or about 350 B.P. and likely a similar date would be obtained for this occupation at Lebret.

Level #3 likely falls between 1200 and 700 B.P., the usual time span for Prairie Side-Notched occupations in southern Saskatchewan (Dyck 1983:129). Some of the ceramics from this level show a similarity to Blackduck ceramics dated around 884 B.P. at the Stott site in southwestern Manitoba. This is one of the furthest west Blackduck sites known in the Parklands to date. Also, this occupation is similar to Level #2A, dated at 725 +/- 95 years B.P. There, however, may be some later materials mixed in with this level, as it was not a discrete occupation. The absence of Prairie or Plains Side-Notched projectile points from this level makes it difficult to determine its exact cultural affiliation and it is referred to as a Late Prairie or Plains Side-Notched occupation.

5.9 Other Dates From Lebret

In Area R, two radiocarbon dates have been obtained. One, from an Avonlea component is 1510 +/- 105 years B.P. (S-2800), or an uncorrected date of A.D. 440. This is quite close to the Avonlea date from the Area S Avonlea Level #4. Another sample was taken from a layer which was uncovered by the backhoe. This was a well-defined paleosol below the Avonlea level. Samples of bison bone and ash from a hearth were recovered along with fish remains and a barbed fish spear. However, due to the ongoing construction no

culturally diagnostic items were recovered from this level. This seemed to be the lowest occupation here and it was decided that a date should be obtained to determine the temporal extent of the cultural deposits in this area. A radiocarbon date obtained from bison bone was 1795 +/- 175 years (S-2762), or an uncorrected date of A.D. 165. It is speculated that this may also be a Besant level, but this may never be confirmed as Area R is privately owned and fully developed.

5.10 The Lebret Site Cultural Chronology: Summary

The Lebret site cultural chronology can be summarized as in Table 5.1. Clearly the site areas (A, B, R, S) have been periodically occupied from about 3000 B.P. to the historic period. All areas of the site exhibit very similar stratigraphic sequences and chronologies. Whether or not all areas of the site were occupied simultaneously is not certain. Regarding the cultural chronology of the Lebret site, and the overall cultural chronology of southern Saskatchewan (Dyck 1983), the only noticeable difference is the early dates for the Sandy Creek Complex. Previous dates for the Sandy Creek Complex are not earlier than 2450 years B.P. (Ibid.:103). This created problems by leaving a gap in the cultural chronology between the Oxbow Complex which disappears around 3050 years B.P. and the earliest known Sandy Creek Complex around 2450 years B.P. It may be suggested, based on the Area A date (2980 +/- 105 years

B.P.), that Sandy Creek immediately follows the Oxbow Complex

Table 5.1: The Cultural Chronology of the Lebret Site

Occupation/ Complex	C-14 Dates; (Uncorrected)	Area	Evidence/ Source
Historic Metis	A.D. 1880's-1939	All	Historic material, cellar depressions, local informants
Historic Parkland-Plains Cree, Assiniboin	A.D. 1700-1880	?	Ethnographic sources, local informants
Fall River, Plains Side-Notched	A.D. 1400-1700	All	Artifactual material, ethnographic sourcess
Prairie Side-Notched, Blackduck(?)	A.D. 800-A.D. 1125	All	Artifactual material, (1) C-14 date
Avonlea	A.D. 325-A.D. 690	All	Artifactual material, (4) C-14 dates
Besant (?)	A.D. 200	B,R	No diagnostics Stratigraphic position, (1) C-14 date
Sandy Creek	930-445 B.C.	A,B.	Diagnostics (2) C-14 dates
Unknown Occupation Late Oxbow(?), Late McKean (?), Pelican Lake(?), Early Sandy Creek(?)	940-535 B.C.	B	No diagnostics Stratigraphic position, (3) C-14 dates

in southern Saskatchewan. Perhaps more work in Area B in Level #7 to identify the complex immediately preceeding the

Sandy Creek occupation in that area may shed some light on the origins of the Sandy Creek Complex.

The longest and most intense occupation of the Lebret site was by the Avonlea peoples who occupied the site between A.D. 325 and A.D. 690, with two dates occurring at A.D. 400 and A.D. 450. This appears to represent a heavy use by the Avonlea peoples of the Qu'Appelle Valley for just over 350 years. A Besant occupation is suspected at around A.D. 200, but this is not yet conclusive. During the Late Plains Indian period encompassing both the Prairie Side-Notched and Plains Side-Notched series, the occupations seem particularly heavy, but due to the extent of cultivation, this is unclear.

During early historic times, the Lebret area was heavily exploited by both Native groups and fur traders and later by French Metis farmers. The nature of this occupation has not been studied extensively, but obviously some historic materials recovered from the plough zone and the later historic structures present on site indicate a continual heavy occupation of the site up until the Second World War when many of the local inhabitants moved away, the men to join the Armed Forces and their wives and families to work in the larger communities (J. LaRocque 1985, personal communication).

6.0 ARTIFACT ASSEMBLAGE

6.1 Artifact Classification

The artifacts recorded from the Lebret site are grouped on the basis of similar material and supposed use. The categories listed below are considered to be tool types. Each artifact type is considered to be:

> ...a group of entities such that each entity possesses a large number of the attributes of the group, each attribute is shared by large numbers of entities and no single attribute is both sufficient and necessary to the group membership (Clark 1968:37).

According to Clark (Ibid.), each artifact type forms a "polythetic group". The utility of the polythetic group-artifact type is that the investigator can include tools that possess a wide variation in attributes, as long as all of the tools grouped together share a large number of the attributes (Meyer 1977:66). The most obvious attributes of the tool types found at the Lebret site are described below.

6.2 Lithic Assemblage

The lithic assemblage may be broken down into two classes: (1) Lithic Tools and (2) Lithic Debitage. Within each group there are a number of subclasses which represent the various tool types based on supposed function or use. The second class, the lithic debitage, is broken down into several classes based primarily on production stages of lithic artifacts. These subclasses or type groups are outlined in Table 6.1.

Table 6.1: Lithic Assemblage: Tool and Debitage Assemblage

Class I: Lithic Tools	Class II: Lithic Debitage
Lithic Tool Types	Lithic Debitage Types
Subclass: Projectile Points	Subclass: Cores
Subclass: End-scrapers	Subclass: Primary Reduction Flakes
Subclass: Sidescrapers	Subclass: Secondary Reduction Flakes
Subclass: Drills	
Subclass: Spokeshaves	
Subclass: Hammerstones	
Subclass: Grinding Stones	
Subclass: Marginally Retouched Flakes	
Subclass: Unmodified Utilized Flakes	
Subclass: Miscellaneous	

6.2.1 Lithic Assemblage Descriptions

The following presents an overview description of the separate subclasses or types for the two classes from the lithic assemblage.

Class I: Lithic Tools

Subclass: Projectile Points

Subclass projectile points includes those lithic artifacts; complete and fragmentary, that were likely used to

tip a projectile. The supposed function is hunting or weaponry. A number of varieties of projectile points are encountered, but since they will be dealt with by cultural level, these varieties will not be described here. Projectile points are generally pointed bifaces with some degree of a haft element.

Subclass: Bifaces

Subclass bifaces includes those lithic artifacts that exhibit finished retouch on two faces of the same lateral margin to produce a cutting edge. These bifaces are generally irregular in outline and considered to be useful for any cutting or sawing purpose. Each variety of biface will be described in detail by cultural level.

Subclass: Endscrapers

MacNeish (1958:105) describes endscrapers as unifacially retouched lithic tools. Most specimens are made on flakes and have a steep cutting edge (with working edge angles that are equal to or approaching 90 degrees), which is commonly convex in outline and located at one end. Some endscrapers, however, exhibit double working edges, generally on opposite ends. In longitudinal cross-section endscrapers are plano-convex or bi-plano in relation to the ventral surface. It is assumed that the majority of these scrapers were hafted and used for a variety of scraping tasks.

Subclass: Drills

Subclass drills includes both hafted and non-hafted

varieties. Each exhibits a projection from the main tool body that was obviously used to perforate softer materials by punching and/or twisting.

Subclass: Spokeshaves

Subclass spokeshaves denotes a type of tool that exhibits a single large concave notch that may be used to scrape convex objects. These notches may be either unifacially or bifacially worked.

Subclass: Hammerstones

Subclass hammerstones includes a variety of cobbles and pebbles that have obviously been used to peck at other materials in the production of other tools or in the general purpose of pounding activities of everyday life (analogous to a hammer in modern culture). These hammerstones may be of either the modified or unmodified variety.

Subclass: Grinding Stones

Subclass grinding stones includes those stone tools that have obviously been used to grind or crush materials in the preparation of foodstuffs or in hide-working. These grinding stones appear to be of an unmodified variety.

Subclass: Marginally Retouched Flakes

Subclass marginally retouched flakes include both primary and secondary flakes that have one or more margins modified to form a stronger cutting or scraping edge while the remainder of the flake is unmodified.

Subclass: Unmodified Utilized Flakes

Subclass unmodified utilized flakes include both primary and secondary flakes that have been used in an expedient manner and no reworking of any edge surface has taken place. The only distinguishing factor is the use-wear on the lateral margins that has occurred as a result of the flake being used for some sort of scraping or cutting task and then discarded.

Subclass: Miscellaneous

This subclass may be used to include other items which will be extensively described when they occur.

Class II: Lithic Debitage (after Crabtree 1972)

Subclass: Cores

Subclass cores includes the nucleus mass of lithic material formed by the worker to the desired shape to allow the removal of a flake. They are pieces of lithic materials bearing negative flake scars. Cores represent the initial stage of lithic artifact manufacture.

Subclass: Primary Reduction Flakes

Subclass primary reduction flakes represent those complete flakes and those shatter flakes which were removed initially from the core. The distinguishing characteristic is the presence of an unmodified cortex on the dorsal side resulting from the initial stage of core reduction. No distinction is made between complete primary reduction platform remnant-bearing flakes and primary reduction shatter in this case.

Subclass: Secondary Reduction Flakes

Subclass secondary reduction flakes represent those complete and those pieces of lithic shatter which were removed secondarily in the process of lithic artifact manufacture. The distinguishing characteristic is the absence of an unmodified cortex on any side resulting from secondary and tertiary stages of core reduction and flake tool manufacture. No distinction is made between complete secondary reduction platform remnant-bearing flakes and secondary reduction shatter in this case.

6.2.2 Lithic Raw Materials

The terminology used to describe the lithic raw material types is similar to that used for most northern Grasslands sites. A total of 18 different raw material types are identified. A brief description of each is included:

Swan River Chert: A locally obtainable cryptocrystalline fine- to medium-grained quartzite. Texture and colour variable (see Leonof 1970:12).

Knife River Flint: A brown petrified lignite material obtained from North Dakota Dunn County Knife River flint quarries. Colour variable: light to dark brown. Separated from the brown chalcedonic materials by fine texture, translucent appearance and presence of fossil plant inclusions.

Obsidian: A clear, hard glass-like volcanic lithic grey to black material. Closest source: Wyoming in Yellowstone National Park (Davis 1972).

Montana Agate: A hard, clear glass-like lithic material with brown to black flecks as inclusions. Source is variable. May also be referred to as Moss Agate or Souris River Agate.

Pebble Chert: An opaque, fairly fine-grained material, obtained locally from small pebbles. These are usually green or brown with eroded cortex.

Brown Chert/Black Chert: Generally fine-grained and consistent cherts differentiated from each other by colour and from Swan River chert in consistency of colour and texture.

Limestone Chert: A coarse opaque grey-white to tan coloured chert, considered to be a local material.

Quartzite: A coarse-grained brown to tan coloured material. Locally obtainable from glacial till plains.

Altered Felsic Lava: A grey mottled consistently fine- to medium-textured material, may be local to major Saskatchewan river drainage areas, (E. Johnson 1986, personal communication). This material may also be referred to as "Gronlid Siltstone", (D. Meyer 1986, personal communication), but the former name is used throughout this report.

Quartz: A local medium- to fine-grained material, may be white-opaque to clear-translucent. More common in the Boreal Forest, but may be locally obtainable in river cobbles.

Clear Chalcedony: Close to Montana Agate in appearance;

is extremely fine-grained, but devoid of inclusions. Source is unknown.

Brown Chalcedony: Translucent generally fine-grained material, but may also be variable in texture. Occasionally referred to as "SARD Chalcedony" (e.g., Morgan 1979). Source considered local.

Grey Chalcedony: Fine-grained translucent grey material. Source is unknown.

Basaltic: Generally coarse grey to grey-green basalt materials. Considered local.

Porcellanite: Generally an opaque red, brown, or blue-grey material. Sometimes referred to as "fused shale". Source is likely Montana (Rogers 1917:1), but sources may exist in southwestern Saskatchewan (E. Johnson 1986, personal communication).

Granite: Locally obtainable heterogenous material found in glacial drift cobbles.

Silicified Sediment: A mottled, grey-blue material similar to some Swan River cherts, but has a noticeably rougher, less silicious texture. May be a coarse fused shale and is considered a local material.

6.3 Ceramic Assemblage

The ceramic assemblage contains two classes of ceramic artifacts: (1) cooking vessels and (2) miniature vessels and bowls. Vessels were determined by rim sherds primarily where possible, and when no rim sherds were present, similar body

sherds were assigned to a vessel. These vessel classes are not broken down into further classifications, but rather, each vessel will be described separately by cultural level. Several descriptive terms used to describe the different parts of the vessel are illustrated in Figure 6.1.

6.4 Organic Assemblage

The organic assemblage excludes unmodified faunal remains, and includes two classes: (1) bone artifacts and (2) shell artifacts. Within each of these two groups are a number of subclasses. These subclasses represent various bone and shell artifacts based on their supposed function or use. These subclasses or typed groups are outlined in Table 6.2.

Table 6.2: Organic Assemblage: Bone and Shell Artifact Classifications

Class I: Bone Artifacts	Class II: Shell Artifacts
Bone Artifact Types	Shell Artifact Types
Subclass: Fleshers	Subclass: Spoons
Subclass: Needles	Subclass: Beads
Subclass: Beads	
Subclass: Fish Spears	
Subclass: Awls/Punches	
Subclass: Miscellaneous	

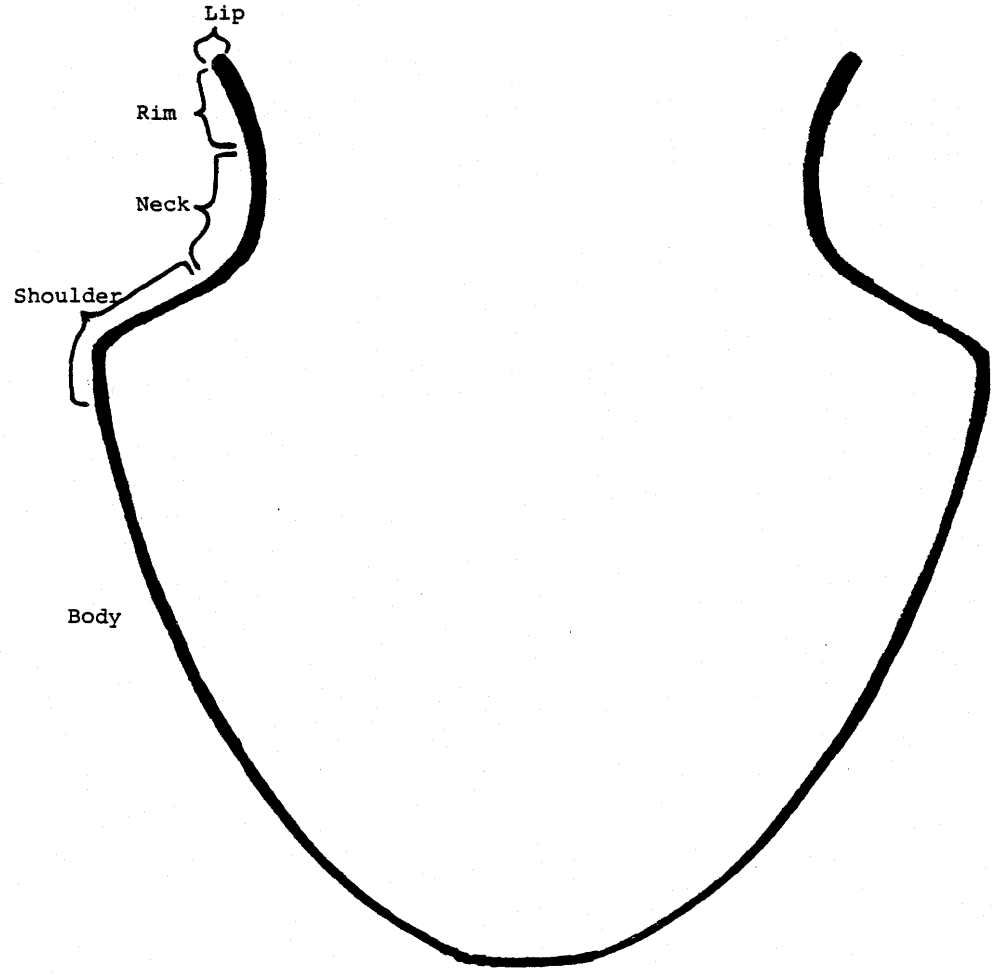


Figure 6.1: Terms used to designate ceramic vessel portions

6.4.1 Organic Assemblage Description

Class I: Bone Tools

Subclass: Fleshers

Fleshers are hide-working tools, usually fashioned from long-bone shafts. They may be toothed or blunt-edged. Their function was to scrape flesh from the interior of a raw animal hide for processing into leather or raw hide. They are generally chisel-shaped in cross-section and may have been used in butchering as well as fleshing.

Subclass: Needles

Needles are generally small in diameter, well-polished bone tools that taper to a fine point. Their supposed function is in sewing.

Subclass: Beads

Beads are considered to be ornamental items, generally cylindrical, but may also be of any shape, which are drilled to allow them to be strung. Small complete drilled items may also function as beads. There is no distinction made here between cylindrical "necklace" type beads and pendants.

Subclass: Fish Spears

Fish spears are generally robust pieces made from solid long-bone elements. They are pointed and often the exterior is roughened on the shaft and the proximal end is rarely larger in diameter than the remaining shaft. Barbs or notches in the shaft may occur. They do not exhibit line holes or scarfing. The function is as an aid to fish

collecting from a trap, or for spear fishing alone.

Subclass: Awls/Punches

Awls or punches are considered to be hide-working tools. Their primary function is to perforate hide in order to create holes for stitching. Awls and punches differ only slightly. Both are generally long and slender with a pointed distal working end. The proximal end is blunted or may even exhibit a haft. Generally, punches are larger and more robust than awls, but this distinction is arbitrary, so the two are classed together.

Subclass: Miscellaneous

This catch-all category includes those tools whose function may be questionable, or pieces of tools that are unidentifiable.

Class II: Shell Artifacts

Subclass: Spoons

Spoons are scoops made from bi-valve shells. Their supposed function is to hold or aid in the holding of loose substances and may have been used to perform a variety of tasks that require scooping.

Subclass: Beads

Shell beads are considered to be strictly ornamental or artifacts of personal adornment rather than utilitarian items.

7.0 LATE PLAINS INDIAN PERIOD ARTIFACT ASSEMBLAGE DESCRIPTION BY CULTURAL LEVEL

7.1 Introduction

Beginning with the latest and continuing to the earliest occupations, the lithic, ceramic and organic artifact assemblages are described. The cultural complexes described in this chapter are as follows: Fall River Plains Side-Notched, Late Plains and Prairie Side-Notched, Prairie Side-Notched, Avonlea, Unknown Occupation (Level #5, Area B), Sandy Creek, Unknown Occupation (Level #7, Area B).

7.2 Fall River Plains Side-Notched Complex

7.2.1 Introduction

The Fall River Plains Side-Notched Complex occupation is represented by a discrete occupation (Level #2) in Area S, excavation Units S-1 to S-8 (Figure 4.3).

7.2.2 Lithic Assemblage

There were a total of 58 lithic pieces recovered from Level #2, Area S. Two of these, a projectile point and a marginally retouched flake, are lithic tools and 56 are debitage. The breakdown of lithic tools and debitage by lithic material is illustrated in Table 7.1, and the location of lithic tools is plotted on Figure 1, Appendix VI.

(1) Lithic Tools

There were no bifaces, endscrapers, sidescrapers, drills, spokeshaves, hammerstones, grinding stones or unmodified utilized flakes recovered from this level.

TABLE 7.1: Area S , Level #2 , Number of Lithic Tools and Debitage by Lithic Material

LITHIC MATERIAL / Tools	Swan River Chert f	%	Knife River Flint f	%	Obsidian f	%	Montana Agate f	%	Pebble Chert f	%	Brown Chert f	%	Black Chert f	%	Limestone Chert f	%	Quartzite f	%
Proj. Points	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bifaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
End-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Side-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Drills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hammer-stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retouched Flakes	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utilized Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debitage																		
Cores	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prim. Red. Fl.	6	33.3	1	5.6	-	-	-	-	6	33.3	1	5.6	-	-	-	-	2	11.1
Second. Red. Fl.	21	55.4	6	15.8	-	-	-	-	3	7.9	1	2.6	-	-	-	-	4	10.5
TOTALS	28	48.2	8	13.8	0	0.0	0	0.0	9	15.4	2	3.5	0	0.0	0	0.0	6	10.2

TABLE 7.1: Area S , Level #2 , Number of Lithic Tools and Debitage by Lithic Material (Continued)

LITHIC MATERIAL / Tools	Altered Felsic Lava f	%	Quartz f	%	Clear Chalcedony f	%	Brown Chalcedony f	%	Grey Chalcedony f	%	Basaltic f	%	Porcelainite f	%	Granite f	%	Silicified Sediment f	%	TOTAL f	%
Proj. Points	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1.7
Bifaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
End-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Side-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Drills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Hammer-stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.00
Retouched Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1.7
Utilized Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Debitage																				
Cores	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1.7
Prim. Red. Fl.	-	-	-	-	-	-	-	-	-	-	2	11.1	-	-	-	-	-	-	18	31.1
Second. Red. Fl.	-	-	1	2.6	1	2.6	1	2.6	-	-	-	-	-	-	-	-	-	-	38	65.5
TOTALS	0	0.0	1	1.8	1	1.8	1	1.8	0	0.0	2	3.5	0	0.0	0	0.0	0	0.0	58	100.0

Projectile Points

A single Swan River chert Late Plains Side-Notched projectile point (S-6-9) was recovered from Level #2, Area S. This point is fairly large, triangular in shape and is missing the tip and one basal corner. Quite possibly, this point was broken during use. It is quite thin and finely worked with the side notches well above the base. The maximum length of this point is 27.9+ mm; its maximum width is 16.0+; maximum thickness is 4.0 mm and the width at the notches is 8.8 mm. This point weighs 1.8+ g and is illustrated in Appendix IV by Specimen Number.

Marginally Retouched Flakes

A single marginally retouched flake of Knife River flint was recovered from Level #2, Area S. It is tiny and only the left ventral margin bears the retouch. Use-wear is not detectable on this specimen.

(2) **Lithic Debitage**

Cores

A single Swan River chert core was recovered from Level #2, Area S, and its location is plotted on Figure 1, Appendix VI.

Primary Reduction Flakes

Eighteen primary reduction flakes making up 31.1% of the entire lithic assemblage were recovered from Level #2, Area S. Swan River chert and local pebble chert are the two most common lithic materials in this category, each making up

33.3% of the primary reduction flakes. The distribution by number and by weight of these flakes is illustrated in Figures 2 and 3, Appendix VI, respectively.

Secondary Reduction Flakes

A total of 38 secondary reduction flakes were recovered from Level #2, Area S. They make up 65.5% of the total lithic assemblage, and over half of these are Swan River chert flakes. The distribution of secondary reduction flakes by number and weight is recorded on Figures 4 and 5, Appendix VI, respectively.

(3) **Fire-Cracked Rock**

Forty-three pieces of granitic fire-cracked rock (Figure 6, Appendix VI), weighing 2559.5 g were recovered from Level #2, Area S.

7.2.3 Ceramic Assemblage

A single vessel was recovered from Level #2, Area S. This vessel is poorly represented by one rim sherd and three body sherds. Its metric and non-metric attributes are listed in Table 7.2, and its profile is illustrated in Figure 7.1. It is identical to Vessel #11 from the plough zone of Area B which is also poorly represented. Stratigraphically it was separate from the other Late Plains vessels in Area S, Level #3, but undoubtedly they are quite close in time. There is nothing particularly diagnostic about this vessel except that it is very well smoothed on the interior and exterior. A larger ceramic sample where reconstruction is possible is

TABLE 7.2 : Fall River Plains Side-Notched Complex Vessels Data, Metrics and Non-Metrics

ATTRIBUTES	VESSEL # 1 ; AREA S, Level #2
Vessel Shape/Profile	Unknown; straight walled
Vessel Parts	**Rim Sherds** - 1 **Near-rim Sherds** - 0 **Near-base Sherds** - 0 **Body Sherds** - 3
Paste	
Texture	Consistent, compact, no exfoliation present
Temper	
Type	Crushed granite (grit)
Size Range	0.5 to 3.5 mm
Lip	
Decoration	Plain, smoothed, exterior slightly indented
Shape	Slightly squared
Rim	
Thickness (range)	7.0 to 8.4 mm
Decoration	No decoration present
Body	
Exterior Surface Finish	Irregular over vessel surface
Original	Textile impressed
Secondary	Some areas heavily smoothed
Interior Surface Finish	Wiped: irregularly
Vessel Manufacture	Unknown
Vessel Size	Unknown
Estimated Rim Diameter	Unknown, rim sherd too small
Estimated Vessel Height	Unknown
Other	No surfaces exhibit carbonization
Figure Number	

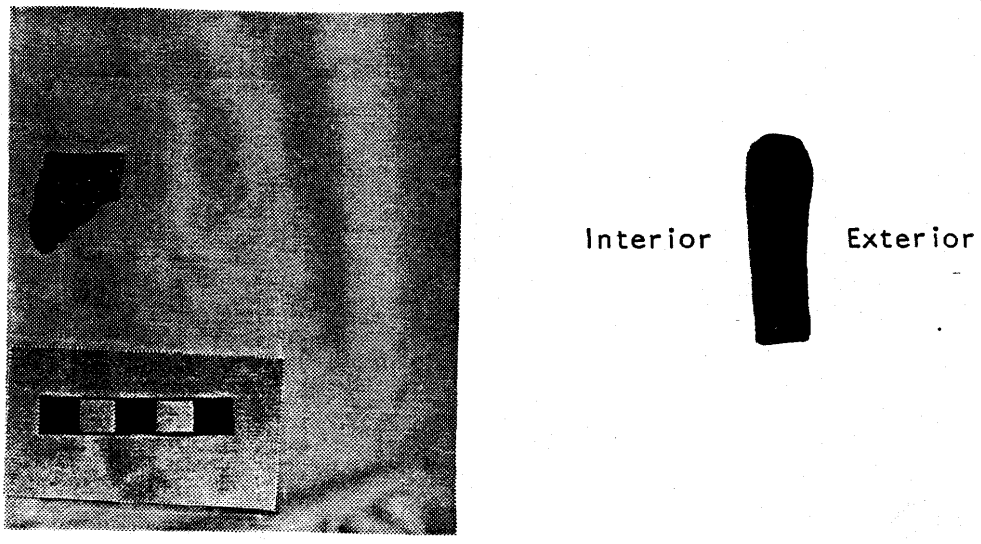


Figure 7.1: Vessel #1, Area S, Level #2. Profile and Rim (#S-5-1) Scale = 5 cm

needed before much may be said about the ceramics assigned to Level #2, Area S.

7.2.4 Organic Assemblage

There was only one bone artifact recovered from Level #2, Area S. No needles, beads, fish spears or awls/punches were recovered from this level.

Flesher

Specimen Number S-2-15 is a small fragment of a rib flesher tool. There are only three carved teeth on the working end of this tool which was likely broken during use.

7.2.5 Fall River Plains Side-Notched Artifact Assemblage: Summary

Very little may be said about such a small sample of cultural material. The lithic, ceramic, and organic tool assemblages indicate a variety of activities such as lithic tool production, hide-working and cooking were taking place at a campsite setting. The projectile point, apparently broken during use, may have been discarded after being removed from its haft.

7.3 Late Plains or Prairie Side-Notched Complex

7.3.1 Introduction

The Late Plains and Prairie Side-Notched Complex occupation is represented by the cultivated plough zone layer in Area A (Units A-1 to A-8, Figure 4.1), Level #2, and Area B (all excavation units, Figure 4.2) and by the intact Level #3 occupation (Units S-1 to S-8, Figure 4.3) in Area S.

7.3.2 Lithic Assemblage

In the plough zone of both Area A and Area B, an arbitrary separation between historical materials (Level #1) and prehistoric materials (Level #2) was made. Level #2 in these two areas obviously contains a number of Late Side-Notched occupations that have been mixed. It has been assumed that the lithic remains recovered are prehistoric in origin. This view is generally supported by a number of other studies of Metis sites of this period. While it is not uncommon for lithic items to be found at Metis sites of this time period or earlier, (e.g., McLeod 1982; Elliot 1973),

their association with the actual occupation is regularly questioned and the lithic artifacts are usually considered to be intrusive into the Metis occupation. However, direct association between stone tools and Historic Metis occupations has not been disproven. The fact that some stone tools may have been made by Metis peoples prior to and into the period described for the Metis at Lebret remains a possibility.

Area A

There were a total of 141 lithic pieces recovered from Level #2, Area A, of which 11 are tools and 130 are lithic debitage. The breakdown of tools and debitage by lithic material is shown in Table 7.3.

(1) **Lithic Tools**

There were no sidescrapers, drills, spokeshaves or grinding stones recovered from this level.

Projectile Points

Three Swan River chert projectile points were recovered from Level #2, Area A. Two specimens, (A-1-14; A-4-1) and one other (T19-14), that was recovered from the plough zone of a nearby 50 x 50 cm test unit, may be assigned to this level. Specimen Number A-1-14 appears to have been reworked into a hafted scraper. A nearly identical point was found at the Long Creek site (Wettlaufer and Mayer-Oakes 1960:33) in Level 1B from the Fall River occupation. The point is

described in the Long Creek site report as atypical of the

TABLE 7.3: Area A , Level #2 , Number of Lithic Tools and Debitage by Lithic Material

LITHIC MATERIAL / Tools	Swan River Chert f	%	Knife River Flint f	%	Obsidian f	%	Montana Agate f	%	Pebble Chert f	%	Brown Chert f	%	Black Chert f	%	Limestone Chert f	%	Quartzite f	%
Proj. Points	3	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bifaces	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
End-scrapers	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-
Side-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Drills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hammer-stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retouched Flakes	3	75.0	1	25.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utilized Flakes	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debitage																		
Cores	1	25.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prim. Red. Fl.	35	81.6	1	2.3	-	-	-	-	1	2.3	-	-	-	-	2	4.6	1	2.3
Second. Red. Fl.	61	73.6	11	13.2	1	1.1	2	2.2	1	1.1	2	2.2	2	2.2	1	1.1	-	-
TOTALS	104	73.9	14	9.9	1	0.7	2	1.4	3	2.1	2	1.4	2	1.4	3	2.1	1	0.7

TABLE 7.3: Area A , Level #2 , Number of Lithic Tools and Debitage by Lithic Material (Continued)

LITHIC MATERIAL / Tools	Altered Felsic Lava f	%	Quartz f	%	Clear Chalcedony f	%	Brown Chalcedony f	%	Grey Chalcedony f	%	Basaltic f	%	Porcelainite f	%	Granite f	%	Silicified Sediment f	%	TOTAL f	%
Proj. Points	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2.1
Bifaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.7
End-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.7
Side-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Drills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Hammer-stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	1	0.7
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Retouched Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	2.8
Utilized Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.7
Debitage																				
Cores	-	-	-	-	-	-	2	75.0	-	-	-	-	-	-	-	-	-	-	3	2.1
Prim. Red. Fl.	-	-	-	-	-	-	2	4.6	-	-	-	-	1	2.3	-	-	-	-	43	30.6
Second. Red. Fl.	-	-	-	-	2	2.2	1	1.1	-	-	-	-	-	-	-	-	-	-	84	59.6
TOTALS	0	0.0	0	0.0	2	1.4	5	3.6	0	0.0	0	0.0	0	0.0	1	0.7	0	0.0	141	100.0

side-notched varieties found there, and its apparent bluntness caused Wettlaufer to describe this as a "stunner or bunt". Whether or not the artifacts in question functioned as stunners, hafted knives or scrapers does not eliminate their strong similarities.

Point T19-14 is an almost complete specimen except for one ear and half of the base which are broken away. It is likely of the Plains Side-Notched type. It must be noted that none of the side-notched point varieties described for the Fall River Culture by Wettlaufer (in Wettlaufer and Mayer-Oakes 1960:33) resembles point T19-14 very closely, so it is entirely possible that more than one Late Prehistoric period occupation is represented in the plough zone of Area A.

The third specimen is a larger, cruder point and is likely a Late Prehistoric preform. Although it cannot be readily assigned to any cultural complex, the overall form is too unfinished to represent a finished Late Plains triangular specimen. These three points are illustrated by Specimen Number in Appendix IV.

Bifaces

A single Swan River chert biface (A-6-1) was recovered from Level #2, Area A. It is fairly small, rectangular in shape, and biconvex in cross-section. The left dorsal edge is very finely worked while the right dorsal edge is irregular and unfinished. A lateral fracture is evident near

the proximal end suggesting a break in manufacture. This biface could have been worked into a projectile point. Its metric attributes are listed in Table 7.4.

Endscrapers

A single pebble chert endscraper (A-3-6) was recovered from Level #2, Area A. It is trapezoidal in overall shape and is bi-plano in cross-section with evidence of a cortex on its dorsal surface. There are only minimal signs of wear along the working edge near the ventral surface. This endscraper is illustrated in Appendix IV by specimen and its metric attributes are listed on Table 7.5.

Hammerstones

A single granitic fragment recovered from Level #2, Area A, bears the remnants of a pecked groove. This indicates that it was once part of a grooved maul or hammerstone. This fragment appears to have been fire-cracked.

Marginally Retouched Flakes

Four marginally retouched unifacial flake tools were recovered from Level #2, Area A. Three are made from Swan River chert while the fourth is made from Knife River flint. The three Swan River chert retouched flakes are made from secondary reduction flakes, but the Knife River flint specimen is a decortication or primary reduction flake. This latter piece is blade-like, being very long and narrow. In all cases, the lateral or the distal lateral margin bears the retouch.

Table 7.4: BIFACE METRIC ATTRIBUTES*, LATE PRAIRIE OR PLAINS SIDE-NOTCHED COMPLEX

Specimen Number	AREA	Maximum Length (mm)	Maximum Width (mm)	Maximum Thickness (mm)	Working Edge Angles D.	V.
A-6-1	A	21.1+	17.9	4.6	61°	60°
0N18W-1	B	15.6	10.2	4.2	67°	65°
5S13W-1	B	11.0+	12.9+	5.1+	67°	53°
7S15W-1	B	42.1	49.3	8.0	59°	68°
S-3-23	S	26.1+	21.1+	5.6	54°	50°

* (+) indicates a portion is missing enabling only partial measurements to be taken

D - Dorsal
V - Ventral

Table 7.5: ENDSCRAPER METRIC ATTRIBUTES* LATE PRAIRIE OR PLAINS SIDE-NOTCHED COMPLEX

Specimen Number	AREA	Maximum Length (mm)	Maximum Width (mm)	Maximum Thickness (mm)	Working Edge Angle
A-3-6	A	18.0	18.5	9.4	70^{o}-72^{o}
3S-17W-1	B	23.5	17.3	7.9	72^{o}
4S-16W-1	B	18.8	15.9	5.7	82^{o}
S-1-29	S	32.7	25.2	10.1	87^{o}

* (+) indicates that a portion is missing enabling only partial measurements to be taken

Unmodified Utilized Flakes

A single Knife River flint utilized primary reduction flake tool was recovered from Level #2, Area A. It is a rather thick specimen with a very heavy cortex and blunt proximal end. The distal and distal lateral edges bear minute wear scars on the ventral surface suggesting that this was a scraping rather than a cutting tool.

(2) **Lithic Debitage**

Due to the disturbed nature of the plough zone in Level #2, Area A, studies were not done on the distribution of lithic debitage since the information's worth was questionable.

(3) **Fire-Cracked Rock**

Due to the disturbed nature of the plough zone in Level #2, Area A fire-cracked rock was not collected.

Area B

The plough zone layer in Area B yielded, like Area A, both historic and prehistoric materials. All lithic materials recovered from this layer were assigned to the Late Prairie or Plains Side-Notched Complex (cultural Level #2). There were a total of 337 lithic pieces recovered from Level #2, Area B, of which 11 were lithic tools and 326 were debitage. The breakdown of lithic tools and debitage is illustrated in Table 7.6.

(1) **Lithic Tools**

No drills or spokeshaves were recovered from this level.

TABLE 7.6: Area B , Level #2 , Number of Lithic Tools and Debitage by Lithic Material

LITHIC MATERIAL	Swan River Chert		Knife River Flint		Obsidian		Montana Agate		Pebble Chert		Brown Chert		Black Chert		Limestone Chert		Quartzite	
Tools	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Proj. Points	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bifaces	2	50.0	1	25.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
End-scrapers	-	-	1	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Side-scrapers	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Drills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hammer-stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retouched Flakes	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utilized Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debitage																		
Cores	1	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prim. Red. Fl.	31	70.4	4	9.1	-	-	-	-	4	9.1	-	-	1	2.3	-	-	1	2.3
Second. Red. Fl.	206	73.6	40	14.3	1	0.4	5	1.8	5	1.8	-	-	3	1.0	-	-	-	-
TOTALS	242	71.7	47	14.0	1	0.3	5	1.5	9	2.7	0	0.0	4	1.2	0	0.0	1	0.3

TABLE 7.6: Area B , Level #2 , Number of Lithic Tools and Debitage by Lithic Material (Continued)

LITHIC MATERIAL	Altered Felsic Lava		Quartz		Clear Chalcedony		Brown Chalcedony		Grey Chalcedony		Basaltic		Porcelainite		Granite		Silicified Sediment		TOTAL	
Tools	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Proj. Points	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.3
Bifaces	-	-	-	-	-	-	1	25.0	-	-	-	-	-	-	-	-	-	-	4	1.2
End-scrapers	-	-	-	-	-	-	1	50.0	-	-	-	-	-	-	-	-	-	-	2	0.6
Side-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Drills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Hammer-stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	1	0.3
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	1	0.3
Retouched Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.3
Utilized Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Debitage																				
Cores	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	1	0.3
Prim. Red. Fl.	-	-	-	-	-	-	3	6.8	-	-	-	-	-	-	-	-	-	-	44	13.0
Second. Red. Fl.	-	-	-	-	2	0.7	13	4.6	-	-	1	0.4	3	1.0	-	-	1	0.4	280	83.1
TOTALS	0	0.0	0	0.0	2	0.6	18	5.3	0	0.0	1	0.3	3	0.9	3	0.0	1	0.3	337	100.0

Projectile Points

One small, complete grey Swan River chert Plains Side-Notched projectile point (Specimen B-S-1) was recovered from the plough zone layer of a road cutbank northeast of the Area B excavations. The metric attributes of this point are recorded in Table 7.7, and it is illustrated in Appendix IV by Specimen Number. The point exhibits an irregularly-shaped blade and slight side-notches placed well up on the blade 3.0 to 3.5 mm from its straight base.

Bifaces

Four bifaces were recovered from the plough zone layer and assigned to Level #2, Area B. Two are fragments of larger tools and two are complete. The two broken fragments are made from Swan River chert. One (5S13W-1) is a very small edge fragment that appears to have been badly fractured. The other is part of a finely-worked ovoid pointed biface that is small enough to have been a hafted knife. The two remaining bifaces are complete. One (7S15W-1) is a large, crudely-worked ovoid specimen made of poor quality brown chalcedony. It exhibits a roughly flaked serrated edge. The final specimen (ON18W-1) is a tiny, complete, pointed Knife River flint biface. This artifact may have originally been intended as a small projectile point, but the proximal end is much too thick to be hafted properly. Its small size probably restricted further attempts to thin the basal area. Neither of the edges show

Table 7.7: PROJECTILE POINT METRIC ATTRIBUTES* LATE PRAIRIE OR PLAINS SIDE-NOTCHED COMPLEX

Specimen Number	AREA	Maximum Length (mm)	Maximum Width (mm)	Maximum Thickness (mm)	Base Width (mm)	Width @ Notches	Weight (g)
A-1-14	A	28.2	26.0	8.2	14.1	20.3	5.9
A-4-1	A	32.8	19.5	6.7	12.9	n/a	3.8
A-6-75	A	18.4	11.6	2.8	11.6	n/a	0.5
B-S-1	B	18.5	11.5	3.4	10.2	8.9	2.6
S-3-45	S	24.0	15.2	3.0	12.2	n/a	0.9
T-19-14		26.2	16.9	5.2	n/a	10.9	1.5

*(+) indicates a portion is missing enabling only partial measurements to be taken

any sign of wear suggesting that this artifact was limited in its usefulness. The metric attributes of these bifaces are recorded in Table 7.4.

Endscrapers

Two endscrapers were recovered from the plough zone layer and assigned to Level #2, Area B. One (3S17W-1) is a brown chalcedony specimen that bears a cortex on the dorsal surface. Some use-wear is evident on the large convex-shaped working edge. The second endscraper (4S16W-1) is smaller and is made from Knife River flint. This artifact is particularly well made and has three working edges which all exhibit heavy use-wear. The metric attributes of these endscrapers are recorded in Table 7.5, and they are illustrated in Appendix IV by Specimen Number.

Sidescraper

A single Knife River flint sidescraper (8S14W-3) was recovered from Level #2, Area B. It is particularly well made from a secondary reduction flake. Both lateral dorsal edges have been modified to create two steep working edges along the entire lateral portions of this tool. The tool is apparently incomplete and may have been broken during use. There is evidence of heavy use along the left lateral margin, although both edges bear signs of use. This sidescraper is illustrated in Appendix IV by Specimen Number and the metric attributes of this sidescraper are recorded in Table 7.8.

Table 7.8: SIDESCRAPER METRIC ATTRIBUTES* LATE PRAIRIE OR PLAINS SIDE-NOTCHED COMPLEX

Specimen Number	AREA	Maximum Length (mm)	Maximum Width (mm)	Maximum Thickness (mm)	Working Edge Angle
8S-14W-3	B	27.5	18.8	5.3	61^{o}-65^{o}
S-7-20	S	37.8	22.0	6.3	74^{o}

* (+) indicates that a portion is missing enabling only partial measurements to be taken

Hammerstones

One round granite cobble that was likely used as a hammerstone was recovered from Level #2, Area B. This particular specimen is unmodified save for some grinding on one of its surfaces encompassing two to three square centimeters. Other edges bear signs of pecking and battering that likely occurred as a result of repeated striking with this artifact.

Grinding Stones

A single, large, flat granitic artifact resembling a chithos was recovered from Level #2, Area B. A single edge 64.0 mm in width and 10.1 mm thick bears evidence of continued rubbing or smoothing. The texture of this artifact is quite grainy and it is possible that this tool was used in hide preparation.

Marginally Retouched Flakes

A single Swan River chert flake with marginal bifacial retouch was recovered from Level #2, Area B. The retouch is most prominent on the ventral surface along the right lateral margin. The accompanying dorsal retouch is much less prominent and would appear to have been attempted only to straighten out the cutting edge. The working edge exhibits very little use-wear suggesting that the tool was used for a short period of time before being discarded.

(2) **Lithic Debitage**

Due to the disturbed nature of the plough zone in Level

#2, Area B lithic debitage distribution studies were not undertaken. Table 7.6 records the relative amounts of the various categories of lithic debitage in relation to the raw materials and the overall lithic assemblage.

(3) **Fire-Cracked Rock**

Due to the disturbed nature of the plough zone in Level #2, Area B, fire-cracked rock was not recovered.

Area S

There were a total of 224 lithic pieces recovered from Level #3, Area S. Twelve of these are lithic tools and 212 are lithic debitage. Two ochre pebbles were also recovered. The breakdown of lithic tools and debitage by lithic material for this level is illustrated in Table 7.9. The lithic tools in Level #3, Area S are plotted in Figure 7, Appendix IV.

(1) **Lithic Tools**

There were no drills, spokeshaves or unmodified utilized flakes recovered from this level.

Projectile Points

A single, unnotched pointed Swan River chert biface is considered to be this level's only projectile point. It is illustrated in Appendix IV by Specimen Number. This artifact (S-3-45) may, in fact, be a small biface knife or even a projectile point preform. It is classed as a projectile point based on its small size and thinness, and the obvious effort of its maker to produce a very thin tool suggesting that it was intended to tip an arrow. The metric attributes

TABLE 7.9: Area S , Level #3 , Number of Lithic Tools and Debitage by Lithic Material

LITHIC MATERIAL	Swan River Chert		Knife River Flint		Obsidian		Montana Agate		Pebble Chert		Brown Chert		Black Chert		Limestone Chert		Quartzite	
Tools	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Proj. Points	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bifaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
End-scrapers	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Side-scrapers	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Drills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hammer-stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retouched Flakes	-	-	2	75.0	-	-	1	25.0	-	-	-	-	-	-	-	-	-	-
Utilized Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debitage																		
Cores	2	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prim. Red. Fl.	22	48.9	6	13.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Second. Red. Fl.	89	53.9	38	23.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTALS	116	51.8	46	20.6	0	0.0	1	0.5	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

TABLE 7.9: Area S , Level #3 , Number of Lithic Tools and Debitage by Lithic Material (Continued)

LITHIC MATERIAL	Altered Felsic Lava		Quartz		Clear Chalcedony		Brown Chalcedony		Grey Chalcedony		Basaltic		Porcelainite		Granite		Silicified Sediment		TOTAL	
Tools	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Proj. Points	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.5
Bifaces	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	1	0.5
End-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.5
Side-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.5
Drills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Hammer-stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	100.0	-	-	2	0.9
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	100.0	-	-	3	1.3
Retouched Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	1.3
Utilized Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Debitage																				
Cores	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	0.9
Prim. Red. Fl.	-	-	-	-	2	4.4	5	11.2	-	-	1	2.2	-	-	-	-	-	-	45	20.0
Second. Red. Fl.	-	-	2	1.2	2	1.2	-	-	-	-	2	1.2	-	-	-	-	-	-	165	73.6
TOTALS	0	0.0	2	0.9	5	2.2	5	2.2	0	0.0	3	1.3	0	0.0	5	2.2	0	0.0	224	100.0

of this specimen are recorded in Table 7.7.

Bifaces

A single, clear chalcedony biface (S-3-23) was recovered from Level #3, Area S. This appears to be a fragment of a larger tool and is finely worked. The break appears to be midway through the biface body suggesting the original tool was ovoid in shape. The complete end is blunted and unfinished. This specimen's metric attributes are recorded in Table 7.4.

Endscrapers

A single Swan River chert endscraper (S-1-29) was recovered from Level #3, Area S. The specimen shows evidence of a cortex on its dorsal edge and is completely worked on all of its margins. The proximal end, opposite the working edge, appears to have been thinned to facilitate hafting. The single, distally located, working edge shows a fair amount of use-wear. The proximity of this tool to the hearth in Units S-3 and S-4 indicates that some hide-working and a number of other activities were probably taking place near the hearth. The metric attributes of this tool are recorded in Table 7.5.

Sidescraper

A single Swan River chert sidescraper (S-7-20) was recovered from Level #3, Area S. It was made from a secondary reduction flake and modified unifacially along the left lateral dorsal edge. Signs of rather heavy use-wear are

evident along this edge. This artifact is illustrated in Appendix IV by Specimen Number and its metric attributes are recorded in Table 7.8.

Hammerstones

Two granitic hammerstones (S-2-13 and S-6-34) were recovered from Level #3, Area S. Both are fairly small, hand-sized pebbles exhibiting no exterior modification to their original forms other than evidence of battering, chipping and pecking along the lateral margins that likely resulted from use in a variety of pounding and flint-knapping tasks.

Grinding Stones

Three granitic grinding stones (S-3-54, S-2-15, and S-6-28) were recovered from Level #3, Area S. The latter two are fairly small, hand-sized cobbles which exibit flattened surfaces that are polished smooth. The polishing has rounded the edges up towards the body of these rocks. This seems to be a condition caused by rubbing or grinding the stones against a hard surface, presumably to crush whatever is being processed. Specimen S-3-54 is a rectangular, tabular piece of granite that has been heavily worn on three of its four sides. These are smoothed and rounded. This is a chithos used for hide-working.

Marginally Retouched Flakes

Two Knife River flint (S-1-15 and S-4-53), and one Montana Agate (S-1-20) marginally retouched thinning flakes were recovered from Level #3, Area S. The two Knife River

flint specimens are marginally retouched on one lateral edge only, while the Montana Agate specimen is retouched on the proximal lateral margin. None of the flakes show any great degree of use-wear.

(2) **Lithic Debitage**

Cores

Two Swan River chert cores were recovered from Level #3, Area S. Their locations are plotted in Figure 7, Appendix VI.

Primary Reduction Flakes

Forty-five primary reduction flakes, making up 20.1% of the total lithic assemblage, were recovered from Level #3, Area S. The relative frequencies of lithic materials are found in Table 7.9. The most common is Swan River chert at 48.9%. The distribution of primary reduction flakes by number and weight relative to the hearth feature in this level is illustrated in Figures 8 and 9, Appendix VI, respectively.

Secondary Reduction Flakes

One hundred and sixty-five secondary reduction flakes make up 73.6% of the entire lithic assemblage in Level #3, Area S. Swan River chert makes up just over one-half (Table 7.9) of these flakes. Their distribution by number and weight relative to the hearth feature in Level #3, Area S, is recorded on Figures 10 and 11, Appendix VI, respectively.

(3) **Fire-Cracked Rock**

There were 418 pieces of granitic fire-cracked rock, weighing 19,863.9 g recovered from Level #3, Area S. The frequency of fire-cracked rock in relation to the hearth feature in this level is illustrated in Figure 12, Appendix VI.

7.3.3 Ceramic Assemblage

The ceramics assigned to this occupation came from cultivated Layer #1, Cultural Level #2 in Areas A and B, as well as Level #3 in Area S. In the disturbed areas of A and B assigning body sherds to rim sherds was considered unreliable given the disturbed nature of the layers. As a result, only Area S sherds from Level #3 allow an accurate assessment of vessel numbers.

A large number of potsherds (305) were found in this Late Prairie or Plains Side-Notched level. A total of 227 body sherds assignable to vessels, and 18 rim sherds were recovered. Sixteen individual vessels were identified. The metric and non-metric data for each vessel is given in Table 7.10. Only limited reconstruction was possible and the vessel shapes and profiles, except for the rims, are generally unknown. All of the vessels are tempered with crushed granite, but there are differences in the fineness of the temper. Most vessels have a fairly compact paste and only seven of the 16 vessels show any signs of exfoliation. The decoration on most vessels is confined to the lip and/or

TABLE 7.10: Late Prairie or Plains Side-Notched Complex Ceramic Vessels Data, Metric and Non-Metric

ATTRIBUTES	VESSEL # 1 ; AREA S, Level #3
Vessel Shape/Profile	Straight-rimmed; globular, rim slightly outflaring
Vessel Parts	Rim Sherds - 1 Near-rim Sherds - 5 Near-base Sherds - 1 Body Sherds - 25
Paste	
Texture	Consistent, very compact, no exfoliation present
Temper	
Type	Crushed granite (grit)
Size Range	0.5 to 2.5 mm
Lip	
Decoration	Top interior: Smooth object impressions, spacing 3.5 mm, depth 1.4 mm, diameter 5.7 mm
Shape	Surface everted inward slope (25° to 30°)
Rim	
Thickness (range)	5.0 to 6.0 mm
Decoration	2 parallel z-twist impressed lines, oblong punctates, interior bosses, distance from lip unknown; spacing 4.5 mm, depth 2.5 mm; diameter 3.0 mm; length 8.5 mm
Body	
Exterior Surface Finish	
Original	Textile impressed
Secondary	Heavily smoothed
Interior Surface Finish	Diagonally wiped
Vessel Manufacture	Unknown
Vessel Size	Unknown, but probably large
Estimated Rim Diameter	Unknown, rim sherd too small
Estimated Vessel Height	Unknown
Other	No carbonization present on any sherd surfaces
Figure Number	

TABLE 7.10: Late Prairie or Plains Side-Notched Complex Ceramic Vessels Data, Metric and Non-Metric (Cont'd)

ATTRIBUTES	VESSEL #2 ; AREA S, Level #3
Vessel Shape/Profile	Unknown
Vessel Parts	Rim Sherds - 1 Near-rim Sherds - 0 Near-base Sherds -0 Body Sherds -0
Paste	
Texture	Consistent, somewhat friable, some exfoliation present
Temper	
Type	Crushed granite (grit)
Size Range	0.5 to 2.0 mm
Lip	
Decoration	Oblique punctates; spacing 3.0 mm, depth 1.6 mm, diameter 2.1 mm
Shape	Squared
Rim	
Thickness (range)	7.3 to 7.8 mm
Decoration	parallel-oblique incised lines, length 6.0 mm, spacing 1.8 mm, depth 1.0 mm, diameter 1.6 mm
Body	
Exterior Surface Finish	
Original	Obliterated
Secondary	Horizontally wiped
Interior Surface Finish	Smoothed
Vessel Manufacture	Unknown
Vessel Size	Unknown
Estimated Rim Diameter	Unknown
Estimated Vessel Height	Unknown, rim sherd too small
Other	No carbonization present on any sherd surfaces
Figure Number	

TABLE 7.10: Late Prairie or Plains Side-Notched Complex Ceramic Vessels Data, Metric and Non-Metric (Cont'd)

ATTRIBUTES	VESSEL # 3 ; AREA S, Level #3
Vessel Shape/Profile	Straight out-flaring rim, globular
Vessel Parts	Rim Sherds - 1 Near-rim Sherds - 0 Near-base Sherds - 0 Body Sherds - 0
Paste	
Texture	Consistent: compact, no exfoliation present
Temper	
Type	Crushed granite (grit)
Size Range	0.25 to 2.0 mm
Lip	Smoothed - top and interior edge have plain, slightly oblique impressions.
Decoration	Spacing 2.1 mm; depth 1.5 mm; diameter 5.0 mm
Shape	Surface everted, inward slope 20° to 25°
Rim	
Thickness (range)	7.1 to 7.5 mm
Decoration	Short oblique incised lines touching lip. Spacing 1.5 mm, depth 1.5 mm, width 1.1 mm, length 5.5 mm
Body	
Exterior Surface Finish	Consistent
Original	Obliterated
Secondary	Horizontal wiping (brushed?)
Interior Surface Finish	Horizontal wiping
Vessel Manufacture	Unknown
Vessel Size	Unknown, probably large
Estimated Rim Diameter	Unknown, rim too small
Estimated Vessel Height	Unknown
Other	Exterior surface carbonized
Figure Number	

TABLE 7.10: Late Prairie or Plains Side-Notched Complex Ceramic Vessels Data, Metric and Non-Metric (Cont'd)

ATTRIBUTES	VESSEL # 4 ; AREA A, Level #2
Vessel Shape/Profile	Straight out-flaring rim, globular
Vessel Parts	Rim Sherds - 1 Near-rim Sherds - 0 Near-base Sherds - 0 Body Sherds - 0
Paste	
Texture	Consistent: compact, no exfoliation present
Temper	
Type	Crushed granite (grit)
Size Range	0.25 to 2.0 mm
Lip	Smoothed - top and interior edge have slightly oblique CWOI.
Decoration	Spacing 1.5 mm; depth 1.0 mm; diameter 2.8 mm
Shape	Surface everted; inward slope 25° to 30°
Rim	
Thickness (range)	5.4 to 6.4 mm
Decoration	No decoration present
Body	
Exterior Surface Finish	Consistent
Original	Obliterated
Secondary	Horizontal wiping (brushed?)
Interior Surface Finish	Horizontal wiping
Vessel Manufacture	Unknown
Vessel Size	Unknown, probably large
Estimated Rim Diameter	Unknown, rim too small
Estimated Vessel Height	Unknown
Other	No carbonization present
Figure Number	

TABLE 7.10: Late Prairie or Plains Side-Notched Complex Ceramic Vessels Data, Metric and Non-Metric (Cont'd)

ATTRIBUTES	VESSEL #5 ; AREA S, Level #3	VESSEL #6 ; AREA S, Level #3
Vessel Shape/Profile	Unknown; likely globular	Unknown; likely globular, straight rimmed
Vessel Parts	Rim Sherds - 1 Near-rim Sherds - 0 Near-base Sherds - 0 Body Sherds -19	Rim Sherds - 2 Near-rim Sherds - 4 Near-base Sherds - 0 Body Sherds - 24
Paste		
Texture	Fairly compact, no exfoliation present	Fairly compact, slight lamination; some exfoliation present
Temper		
Type	Crushed granite (grit)	Crushed granite (grit)
Size Range	0.25 to 2.0 mm	0.25 to 3.0 mm
Lip	Parallel oblique CWOI. Spacing	One parallel incised line. Depth 1.0 mm,
Decoration	2.1 mm; depth 0.5 mm	width, 2.0 mm
Shape	T-shaped, flattened	Flattened, exterior protrusion
Rim		
Thickness (range)	5.0 to 6.0 mm	6.0 to 7.0 mm
Decoration	Small incised punctates touching lip. Spacing 2.5 mm; depth 1.0 mm; diameter 1.5 mm	Oblique shallow punctates. Spacing 1.2 mm; diameter 3.5 mm; depth 1.5 mm. Slight interior bosses
Body		
Exterior Surface Finish	Inconsistent	Inconsistent over body
Original	Textile impressed - obliterated	Obliterated
Secondary	Heavily smoothed	Heavily smoothed, faint textile impressions
Interior Surface Finish	Smoothed	Horizontally wiped
Vessel Manufacture	Unknown	Unknown
Vessel Size	Unknown, probably large	Unknown, probably large
Estimated Rim Diameter	Unknown, rim too small	Unknown, rims too small
Estimated Vessel Height	Unknown	Unknown
Other	Interior surfaces carbonized	No evidence of carbonization on any sherds
Figure Number		

TABLE 7.10: Late Prairie or Plains Side-Notched Complex Ceramic Vessels Data, Metric and Non-Metric (Cont'd)

ATTRIBUTES	VESSEL # 7 ; AREA S, Level #3
Vessel Shape/Profile	Unknown, straight rim
Vessel Parts	Rim Sherds - 1 Near-rim Sherds - 1 Near-base Sherds - 0 Body Sherds - 3
Paste	
Texture	Consistent: fairly friable, exfoliation present on one sherd
Temper	
Type	Crushed granite (grit)
Size Range	0.25 to 2.0 mm
Lip	Smoothed with angled crescentic punctates. Spacing 4.0 mm, diameter 2.5 mm,
Decoration	depth 1.5 mm
Shape	Flattened, exterior protrusion
Rim	
Thickness (range)	4.0 to 5.0 mm
Decoration	None present
Body	
Exterior Surface Finish	Consistent over body
Original	Obliterated, textile impressed
Secondary	Heavily smoothed
Interior Surface Finish	Horizontally wiped
Vessel Manufacture	Unknown
Vessel Size	Unknown, probably large
Estimated Rim Diameter	Unknown, rim too small
Estimated Vessel Height	Unknown
Other	Interior infrequently carbonized
Figure Number	

TABLE 7.10: Late Prairie or Plains Side-Notched Complex Ceramic Vessels Data, Metric and Non-Metric (Cont'd)

ATTRIBUTES	VESSEL #8 ; AREA S, Level #3
Vessel Shape/Profile	Unknown, likely globular
Vessel Parts	Rim Sherds - 1 Near-rim Sherds - 1 Near-base Sherds - 0 Body Sherds - 4
Paste	
Texture	Fairly compact, no exfoliation
Temper	
Type	Crushed granite (grit)
Size Range	0.25 to 2.5 mm
Lip	Smoothed parallel oblique CWOI.
Decoration	Spacing 1.5 mm; depth 0.5 mm
Shape	T-shape, out-flaring, flattened
Rim	
Thickness (range)	6.5 to 7.5 mm
Decoration	Smoothed parallel oblique CWOI (zig-zagging), two levels present running up to lip. Spacing 4.7 mm; depth 0.5 mm
Body	
Exterior Surface Finish	Consistent over body
Original	Newly obliterated "bumpy" textile impressions
Secondary	Smoothed or brushed
Interior Surface Finish	Horizontally wiped
Vessel Manufacture	Unknown
Vessel Size	Unknown, probably large
Estimated Rim Diameter	Unknown, rim too small
Estimated Vessel Height	Unknown
Other	Both surfaces frequently carbonized
Figure Number	

TABLE 7.10: Late Prairie or Plains Side-Notched Complex Ceramic Vessels Data, Metric and Non-Metric (Cont'd)

ATTRIBUTES	VESSEL #9 ; AREA S, Level #3	VESSEL #10; AREA S, Level #3
Vessel Shape/Profile	Straight-rim, globular	Convex rim, globular
Vessel Parts	Rim Sherds - 1 Near-rim Sherds - 1 Near-base Sherds - 0 Body Sherds - 16	Rim Sherds - 1 Near-rim Sherds - 3 Near-base Sherds - 0 Body Sherds -115
Paste		
Texture	Consistent: slightly laminated, some exfoliation present	Consistent: compact, some exfoliation present
Temper		
Type	Crushed granite (grit)	Crushed granite (grit)
Size Range	0.25 to 1.5 mm	0.2 to 1.0 mm
Lip		
Decoration	Plain-smoothed	Parallel incised (one line). Depth 1.8 mm; width 2.0 mm
Shape	Convex	Flattened
Rim		
Thickness (range)	5.2 to 7.0 mm	6.1 to 6.5 mm
Decoration	None present	Oblique and horizontal incised lines Oblique incised strokes between oblique lines
Body		
Exterior Surface Finish	Consistent over body	Irregular over body
Original	Textile impressed	Textile impressed
Secondary	Heavily smoothed	Lightly smoothed to obliterated
Interior Surface Finish	Smoothed	Horizontally wiped
Vessel Manufacture	Unknown	Unknown
Vessel Size	Unknown, probably large	Unknown, probably large
Estimated Rim Diameter	Unknown, rim too small	Unknown, rim too small
Estimated Vessel Height	Unknown	Unknown
Other	Both surfaces occasionally carbonized	Both surfaces frequently carbonized
Figure Number		

TABLE 7.10: Late Prairie or Plains Side-Notched Complex Ceramic Vessels Data, Metric and Non-Metric (Cont'd)

ATTRIBUTES	VESSEL # 11; AREA B, Level #2	VESSEL #12; AREA B, Level #2
Vessel Shape/Profile	Unknown - straight-rimmed	Unknown, likely globular, straight-flared rim
Vessel Parts	Rim Sherds - 1 Near-rim Sherds - 0 Near-base Sherds - 0 Body Sherds - unknown, cultivated context	Rim Sherds - 2 Near-rim Sherds -0 Near-base Sherds - 0 Body Sherds - unknown, cultivated context
Paste		
Texture	Consistent: compact, no exfoliation present	Consistent: compact, slightly laminated, no exfoliation present
Temper		
Type	Crushed granite (grit)	Crushed granite (grit)
Size Range	0.25 to 3.0 mm	0.25 to 2.0 mm
Lip		
Decoration	Plain - smoothed	Loose net impressions on lip surface
Shape	Squared	Squared
Rim		
Thickness (range)	6.0 to 7.5 mm	6.5 to 7.0 mm
Decoration	None present	None present
Body		
Exterior Surface Finish	Consistent over body surface	Consistent over body surface
Original	Obliterated	Loose
Secondary	Heavily smoothed	Smoothed, wiped horizontally
Interior Surface Finish	Horizontal wiping	Horizontal wiping
Vessel Manufacture	Unknown	Unknown
Vessel Size	Unknown, probably large	Unknown, probably large
Estimated Rim Diameter	Unknown, rim too small	Unknown, rim too small
Estimated Vessel Height	Unknown	Unknown
Other	No evidence of carbonization on any sherd surfaces	Interior slightly carbonized
Figure Number		

TABLE 7.10: Late Prairie or Plains Side-Notched Complex Ceramic Vessels Data, Metric and Non-Metric (Cont'd)

ATTRIBUTES	VESSEL # 13 AREA B, Level #2
Vessel Shape/Profile	Unknown, likely straight-rimmed, globular
Vessel Parts	Rim Sherds - 1 Near-rim Sherds - 0 Near-base Sherds - 0 Body Sherds - unknown, cultivated context
Paste	
Texture	Consistent: compact, no exfoliation present
Temper	
Type	Crushed granite (grit)
Size Range	0.12 to 1.5 mm
Lip	Smoothed diamond-shaped punctates on surface. Spacing 4.5 mm; diameter
Decoration	2.6 mm; depth 1.6 mm
Shape	Flattened, T-shaped
Rim	
Thickness (range)	3.5 to 5.0 mm
Decoration	None present
Body	
Exterior Surface Finish	Consistent over vessel body
Original	Textile impressed
Secondary	Horizontal wiping
Interior Surface Finish	Horizontal wiping
Vessel Manufacture	Unknown
Vessel Size	Unknown, probably large
Estimated Rim Diameter	Unknown, rim too small
Estimated Vessel Height	Unknown
Other	No evidence of carbonization on any sherd surfaces
Figure Number	

TABLE 7.10: Late Prairie or Plains Side-Notched Complex Ceramic Vessels Data, Metric and Non-Metric (Cont'd)

ATTRIBUTES	VESSEL #14; AREA B, Level #2	VESSEL #15; AREA B, Level #2
Vessel Shape/Profile	Unknown, likely globular	Unknown, likely miniature, globular, straight-rimmed
Vessel Parts	Rim Sherds - 1 Near-rim Sherds -0 Near-base Sherds - 0 Body Sherds -Unknown, cultivated context	Rim Sherds - 1 Near-rim Sherds - 0 Near-base Sherds - 0 Body Sherds -Unknown, cultivated context
Paste		
Texture	Consistent: compact, no exfoliation present	Consistent: very compact, no exfoliation present
Temper		
Type	Crushed granite (grit)	Crushed granite (grit)
Size Range	0.25 to 1.0 mm	0.25 to 0.5 mm
Lip		
Decoration	Plain - smoothed	Wiped smooth
Shape	Convex	Squared - convex
Rim		
Thickness (range)	5.0 to 6.0 mm	3.8 to 4.0 mm
Decoration	None present	None present
Body		
Exterior Surface Finish	Consistent over vessel body	Consistent over vessel body
Original	Textile impressed	Obliterated
Secondary	Smoothed, horizontal wiping	Horizontal wiping, polished
Interior Surface Finish	Smoothed	Horizontal wiping, polished
Vessel Manufacture	Unknown	Unknown
Vessel Size	Unknown, likely large	Miniature
Estimated Rim Diameter	Unknown, rim too small	Unknown, rim too small
Estimated Vessel Height	Unknown	Unknown, probably less than 10 cm
Other	No evidence of carbonization	No evidence of carbonization
Figure Number		

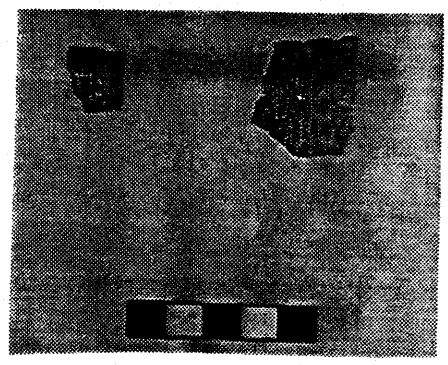
TABLE 7.10: Late Prairie or Plains Side-Notched Complex Ceramic Vessels Data, Metric and Non-Metric (Cont'd)

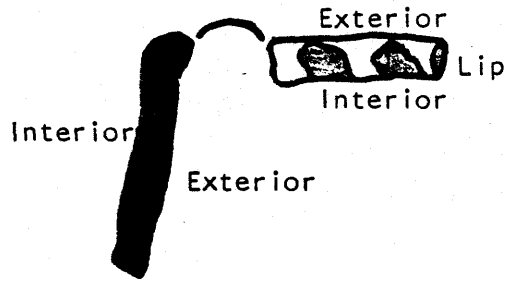
ATTRIBUTES	VESSEL #16 ; AREA A, Test Pit 15, Level #2
Vessel Shape/Profile	Unknown, likely globular, straight rimmed
Vessel Parts	Rim Sherds - 1 Near-rim Sherds - 0 Near-base Sherds - 0 Body Sherds - Unknown, cultivated context
Paste	
Texture	Consistent: fairly compact, slight lamination. Some exfoliation present
Temper	
Type	Crushed granite (grit)
Size Range	0.25 to 4.0 mm
Lip	Smoothed, irregular-shaped punctates. Spacing 2.0 to 3.0 mm; depth 2.0 mm;
Decoration	diameter 3.0 to 4.0 mm
Shape	Convex
Rim	
Thickness (range)	7.0 to 7.5 mm
Decoration	None present
Body	
Exterior Surface Finish	Consistent
Original	Textile impressed
Secondary	Horizontal wiping - smoothing
Interior Surface Finish	Smoothed
Vessel Manufacture	Unknown
Vessel Size	Unknown, likely large
Estimated Rim Diameter	Unknown, rim too small
Estimated Vessel Height	Unknown
Other	Both interior and exterior surfaces carbonized
Figure Number	

the rim areas. The shoulder sherds of some vessels were recovered, however, no decorated shoulders were present.

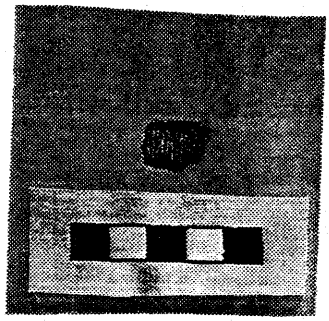
Although the evidence is lacking in many respects, due to the lack of reconstruction, there are several vessels which are quite similar and may, once better evidence is found, form diagnostic types denoting particular complexes. Vessels of note include Vessels #1, #3, #4, #10 and #12 (Figure 7.2). All these vessels are very similar in profile in that they exhibit a straight rim with a slightly everted, decorated lip. They all exhibit breaks where the rim or neck meet the shoulder at an abrupt angle (50 degrees). These vessels are very similar in form and size to Talking Crow Straight Rim pottery (Johnston 1982). Talking Crow occurs at sites along the Missouri River and in particular at the McClure site in South Dakota.

The McClure site, like the Lebret site on the Qu'Appelle River, is located on the Missouri River Valley bottoms. The McClure site is identified as an Arikara village site, likely dating between A.D. 1690 and 1700. These five vessels suggest a Middle Missouri presence at the Lebret site. These may well have been Hidatsa or Arikara peoples and this lends some credibility to the Fall River Plains Side-Notched Complex at the Lebret site during the 1600's and possibly into the early 1700's. The other vessel (#11) from Level #2, Area B is also quite similar to Vessel #1 assigned to the Fall River Late Plains Side-Notched Complex in Area S (Table

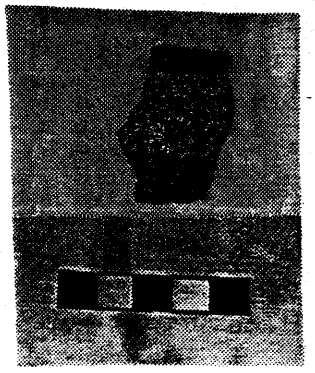


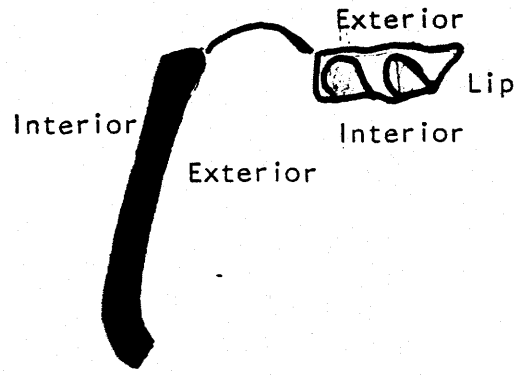


Vessel #1, Area S, Level #3, Rim #S-2-19

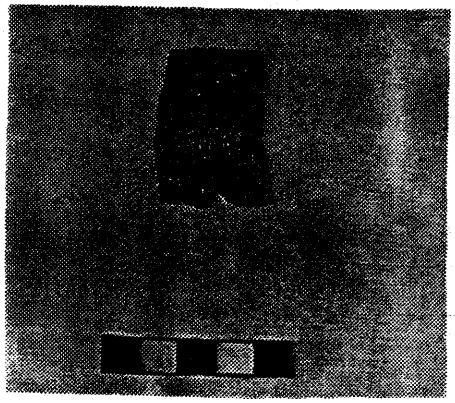


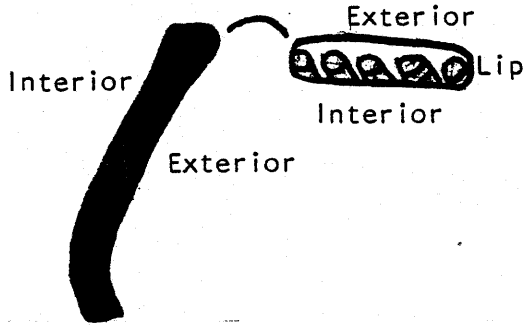
Vessel #2, Area S, Level #3, Rim #S-3-28





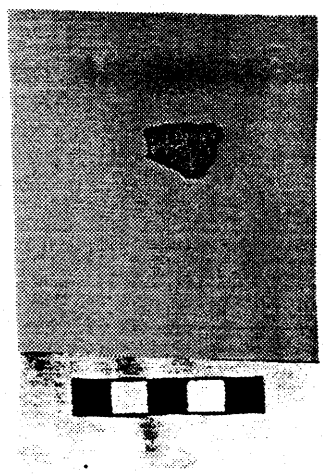
Vessel #3, Area S, Level #3, Rim #S-S-1



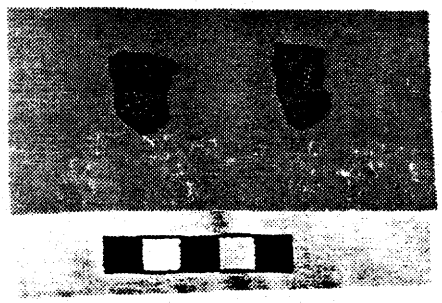


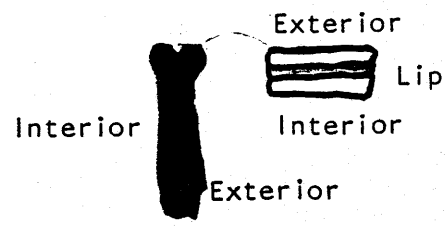
Vessel #4, Area A, Level #2, Rim #1-100

Figure 7.2: Late Prairie or Plains Side-Notched Complex Ceramic Vessels/Profiles Scale = 5 cm

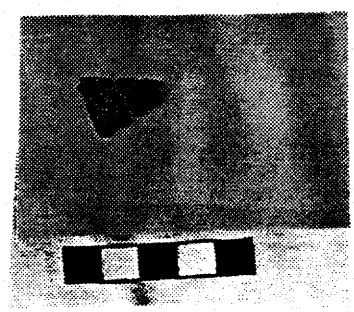


Vessel #5, Area S, Level #3, Rim #S-4-4

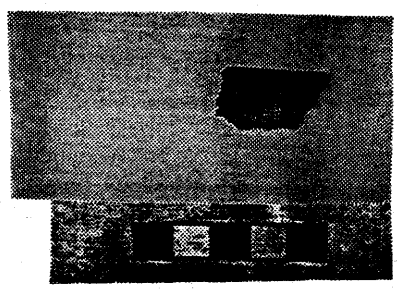


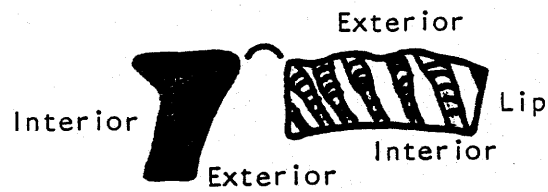


Vessel #6, Area S, Level #3, Rim #S-4-30



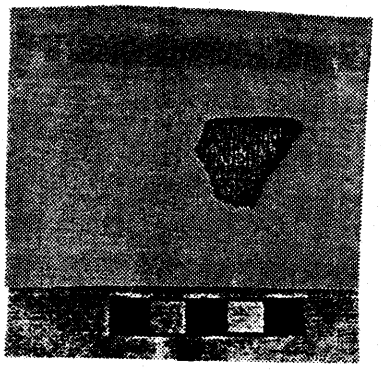
Vessel #7, Area S, Level #3, Rim #S-3-39



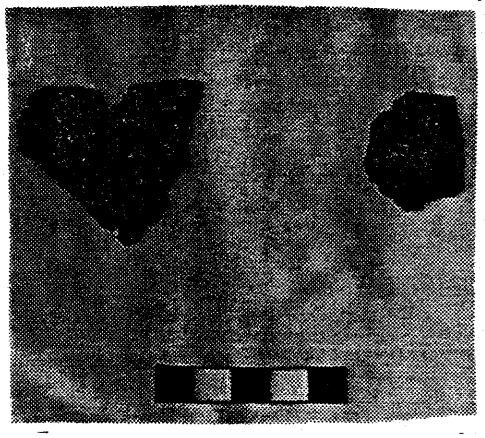


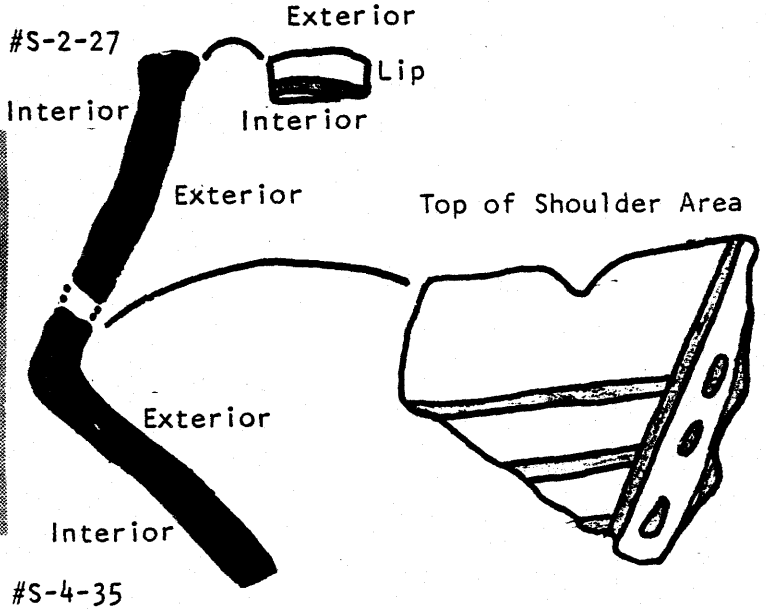
Vessel #8, Area S, Level #3, Rim #S-3-27 (Blackduck?)

Figure 7.2: Late Prairie or Plains Side-Notched Complex Ceramic Vessels/Profiles Scale = 5 cm

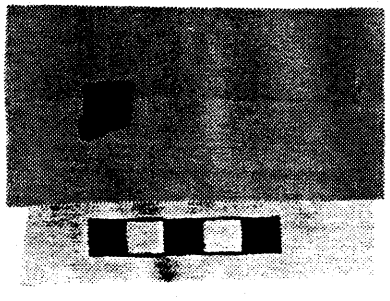


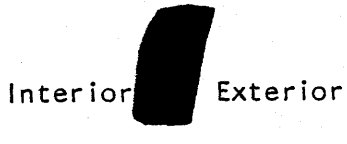
Vessel #9, Area S, Level #3, Rim #S-2-27



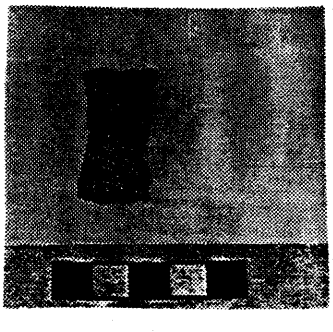


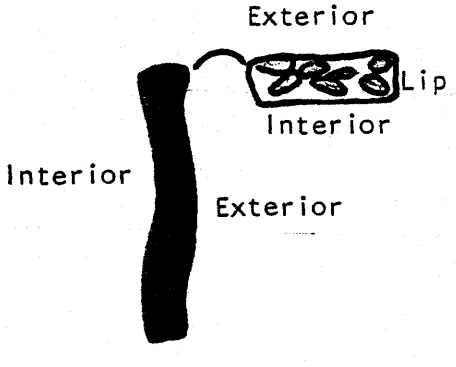
Vessel #10, Area S, Level #3 Rim #S-4-35
Near Rim #S-1-40





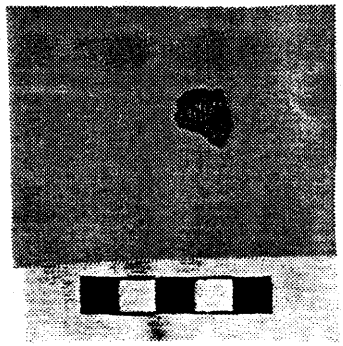
Vessel #11, Area B, Level #2, Rim #3S-17W-5

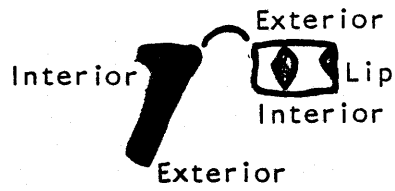




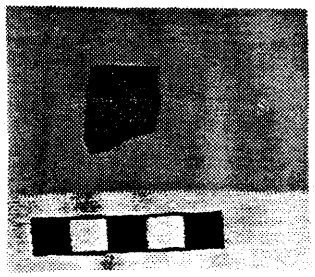
Vessel #12, Area B, Level #2, Rim #8S-14W-1

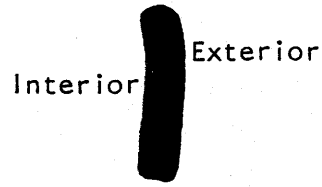
Figure 7.2: Late Prairie or Plains Side-Notched Complex Ceramic Vessels/Profiles Scale = 5 cm



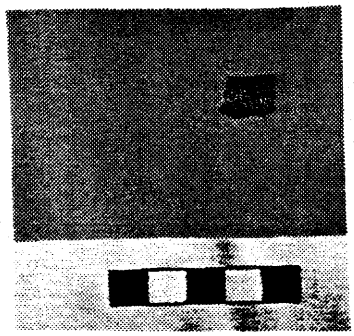


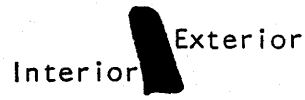
Vessel #13, Area B, Level #2, Rim #4S-18W-10



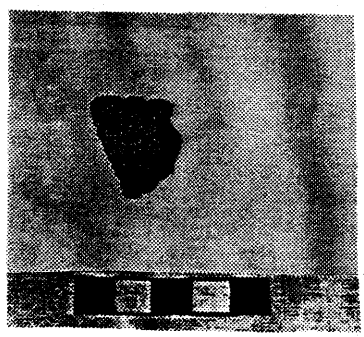


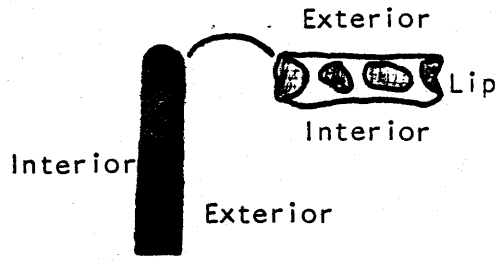
Vessel #14, Area B, Level #2, Rim #1S-17W-2





Vessel #15, Area B, Level #2, Rim #1S-17W-1
(Miniature Vessel)





Vessel #16, Area A, Level #2, Rim #T-15-1

Figure 7.2: Late Prairie or Plains Side-Notched Complex Ceramic Vessels/Profiles Scale = 5 cm

7.2). Vessel #10 (Figure 7.2) exhibits a complex incising of the shoulder to rim area which is similar to other Missouri River area vessels, particularly those with diagonal and horizontal incising (e.g., Johnston 1967; Lehmer and Jones 1968). Vessels #1-#7, #9-#14 and #16 all show similarities with these Missouri River area ceramics. Vessel #8 is somewhat different than the rest. It exhibits a flattened T-shaped lip and cord-wrapped object impressions (CWOI), which is similar to earlier, more eastern Parklands/Plains Blackduck ceramics (Figure 7.2). In particular those from the Randall collection near Killarney, Manitoba and the Stott site near Brandon, Manitoba, where a Plains influence is definitely present in some of the Blackduck varieties from southwestern Manitoba (Callaghan 1979, Saylor 1976).

One miniature vessel (#15) was also recovered (Table 7.10, Figure 7.2). It is represented by a single rim sherd only. The rim shows the beginning of a shoulder 9.5 mm from the lip. It is likely that this vessel is a miniature of the plain lipped and plain rimmed Vessels #9 and #14.

In summary, the ceramics from the Late Prairie or Plains Side-Notched Complex levels exhibit a strong Missouri River area influence. Some of this influence may be historically tied to Siouan-speaking groups habitually inhabiting Missouri River village sites. There may also be evidence of eastern Parkland/Plains people with the presence of a Blackduck influence at the Lebret site.

7.3.4 Organic Assemblage

Area A

No organic artifacts were recovered from Level #2, Area A.

Area B

Eight organic artifacts were recovered from the plough zone layer in Area B, and assigned to Level #2. No beads or awls/punches were recovered from this level.

Fleshers

Specimen Number 9S13W-1 is a bison rib tool where the rib has been split and the interior carved smooth. This tool is broken and is likely the mid-portion of a larger rib tool such as a flesher.

Needles

Two specimens (ON18W-2 and 5S13W-2) are likely bone needle fragments. They represent small diameter round pieces of highly polished, finely worked bone which is typical of the more complete bone needles at the site. Another, 9S15W-2, is quite small and broken, but is fairly flat while the others are generally round with one flat side at most.

Fish Spears

Specimen Number 2S16W-1 is a possible fish spear fragment that bears the mark of two notches cut into one side. It is flat and the unbroken end is tapered to a rounded and polished blunt point.

Miscellaneous

Two unidentifiable, highly polished but very small (less than 20 mm) fragments were also found. These may represent mid-shaft or handle portions of a somewhat larger tool. Another specimen (3S17W-10) is a long bone fragment from a large mammal, likely bison, that is well-smoothed on all surfaces. It is rather flat on one surface and imbedded in a crack is a piece of small granitic rock. This may be a piece of temper from a wet or drying clay vessel that was being smoothed by this particular bone tool.

Area S

Two organic artifacts were recovered from Level #3, Area S. There were no needles, beads, fish spears or awls/punches recovered from this level.

Fleshers

Specimen number S-5-7 is likely tip fragment of a long bone shaft flesher. This tip is highly polished and is very similar to the metatarsal flesher tool from the Avonlea level in Area B.

Miscellaneous

Specimen number S-1-34 is a bone tool fashioned from bison rib. It is spatula-like and bears a heavy polish on its smoothed, crescent-shaped end surface. The function of this tool is unknown. This artifact is illustrated in Appendix V by Specimen Number.

7.3.5 Features

Feature S-2-1 is a fire hearth located in Units S-3 and S-4 in Level #3, Area S (Figure 7.3). The hearth is oval, basin-shaped and is 12 cm deep at its greatest depth. This appears to be a cooking hearth. The hearth area is characterized by reddish burned soil and heavy black charcoal staining. Some ash concentrations are also apparent. The hearth area is rich in lithics and potsherds. It is rather diffuse, but despite a gopher hole through its centre, it was in good condition. Some fire-cracked rock was also present.

Feature S-2-2 is a fire-cracked rock dump located one meter to the west of feature S-2-1. This large pile of granitic fire-cracked rock (Figure 7.4) is surrounded by a scattered area of ash and heavily charcoal stained areas. Initially, it was thought to represent a sauna area, the rocks having been taken from the hearth feature; however, the number of cultural materials surrounding this feature would not be expected in a sweat lodge. There was no evidence of an excavated pit below this rock feature.

7.3.6 Late Prairie or Plains Side-Notched Artifact Assemblage: Summary

Despite the largely disturbed context, the artifact assemblage from this time period indicates that multiple campsite activities such as lithic tool production, hide-working, hide processing, butchering, cooking and fishing were common practices. The hearth feature in Level #3, Area S, indicates that such areas were central for these

Figure 7.3: Fire Hearth Units S-3 and S-4, Level #3, Area S, Feature S-2-1.

Figure 7.4: Fire-cracked Rock Feature S-2-2, Level #3, Area S.

activities. The emphasis seems to be on stone tool manufacture and hide-working. Subsistence activities, as represented by the artifacts, suggest an emphasis on fishing.

7.4 Prairie Side-Notched Complex

7.4.1 Introduction

The only discrete Prairie Side-Notched occupation (Level #2A, Area B) is contained in a layer beneath the cultivated plough zone, but in some units this level was also obliterated by cultivation. The excavation of this level as a discrete occupation was possible, therefore, only in a rather irregular area.

7.4.2 Lithic Assemblage

There were a total of 41 lithic pieces recovered in Level #2A, Area B, two of these, projectile points, being lithic tools and 39 lithic debitage. The breakdown of tools and debitage by material is illustrated in Table 7.11. Lithic tool distribution is plotted in Figure 13, Appendix VI.

(1) **Lithic Tools**

There were no bifaces, endscrapers, sidescrapers, drills, spokeshaves, hammerstones, grinding stones, marginally retouched flakes or unmodified utilized flakes recovered from this level.

Projectile Points

Two projectile point fragments were recovered from Level #2A, Area B. One (9S14W-26) is a distal fragment made from

TABLE 7.11: Area B , Level #2A, Number of Lithic Tools and Debitage by Lithic Material

LITHIC MATERIAL	Swan River Chert		Knife River Flint		Obsidian		Montana Agate		Pebble Chert		Brown Chert		Black Chert		Limestone Chert		Quartzite	
Tools	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Proj. Points	1	50.0	1	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bifaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
End-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Side-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Drills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hammer-stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retouched Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utilized Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debitage																		
Cores	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prim. Red. Fl.	3	42.8	1	14.3	-	-	-	-	2	28.6	-	-	-	-	-	-	-	-
Second. Red. Fl.	14	43.8	6	18.7	-	-	-	-	-	-	3	9.4	-	-	3	9.4	-	-
TOTALS	18	44.0	8	19.5	0	0.0	0	0.0	2	4.9	3	7.3	0	0.0	3	7.3	0	0.0

TABLE 7.11: Area B , Level #2A , Number of Lithic Tools and Debitage by Lithic Material (Continued)

LITHIC MATERIAL	Altered Felsic Lava		Quartz		Clear Chalcedony		Brown Chalcedony		Grey Chalcedony		Basaltic		Poroelalnite		Granite		Silicified Sediment		TOTAL	
Tools	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Proj. Points	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	4.9
Bifaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
End-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Side-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Drills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Hammer-stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Retouched Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Utilized Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Debitage																				
Cores	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Prim. Red. Fl.	-	-	-	-	-	-	1	14.3	-	-	-	-	-	-	-	-	-	-	7	17.1
Second. Red. Fl.	-	-	-	-	1	3.1	1	3.1	-	-	4	12.5	-	-	-	-	-	-	32	78.0
TOTALS	0	0.0	0	0.0	1	2.4	2	4.9	0	0.0	4	9.7	0	0.0	-	0.0	0	0.0	41	100.0

Swan River chert. It exhibits fairly straight lateral edges and is fairly thick. Its metric attributes are recorded on Table 7.12 along with those of the other point fragment (7S14W-25) recovered from this level. The latter specimen is a basal fragment bearing the remnants of a fairly shallow side-notch. This specimen is made from Knife River flint and is probably of the Prairie Side-Notched type. It is unclear whether or not these points were broken through use or during manufacture.

(2) **Lithic Debitage**

Primary Reduction Flakes

There were seven primary reduction flakes recovered from Level #2A, Area B. Swan River chert makes up 42.8% of these flakes. Primary reduction flakes make up 17.1% of the entire lithic assemblage from Level #2A, Area B. The distribution of primary reduction flakes by number and weight is illustrated in Figures 14 and 15, Appendix VI, respectively.

Secondary Reduction Flakes

This category of flakes makes up the largest lithic category in Level #2A, Area B, comprising 78.0% of its entire lithic assemblage. Not surprisingly, Swan River chert is the most common lithic material, making up 43.8% of the secondary reduction flakes. The frequency and distribution by weight of secondary reduction flakes are recorded in Figures 16 and and 17, Appendix VI, respectively.

Table 7.12: PROJECTILE POINT METRIC ATTRIBUTES* PRAIRIE SIDE-NOTCHED COMPLEX

Specimen Number	AREA	Maximum Length (mm)	Maximum Width (mm)	Maximum Thickness (mm)	Base Width (mm)	Width @ Notches	Weight (g)
7S-14W-25	B	7.9+	8.1+	3.5+	n/a	n/a	0.5+
9S-14W-26	B	16.3+	12.8+	4.2+	n/a	n/a	0.7+

*(+) indicates a portion is missing enabling only partial measurements to be taken

(3) **Fire-Cracked Rock**

Thirty-three pieces of granitic fire-cracked rock (Figure 18, Appendix VI), weighing 244.8 g were recovered from Level #2A, Area B.

7.4.3 Ceramic Assemblage

A single vessel (Vessel #1) was recovered from Level #2A, Area B, represented by a single rim and five body sherds. This vessel is quite unlike the other Late Prairie and Plains Side-Notched vessels in that is is quite thick (9.5 to 10.0 mm) and poorly made in comparison. The entire exterior bears parallel cord-wrapped object impressions. These impressions are horizontal at the rim, but their orientation over the vessel body is indeterminable. The impressions were made with s-twist cordage. This vessel's metric and non-metric attributes are recorded in Table 7.13, and its rim profile illustrated in Figure 7.5.

7.4.4 Organic Assemblage

One organic tool was recovered from Level #2A, Area B. There were no needles, beads, fish spears or awls/punches recovered from this level.

Fleshers

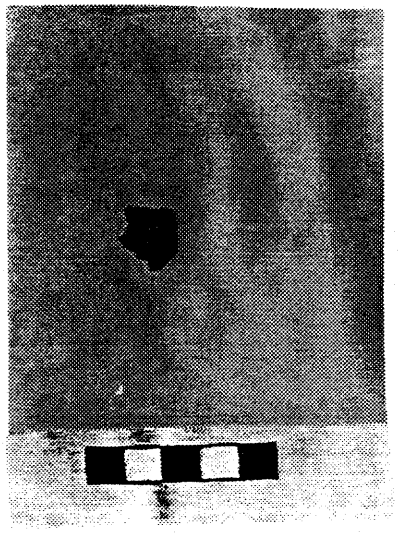
A single broken large mammal rib tool was recovered from Level #2A, Area B. It is likely a broken tip fragment from a flesher. It is extremely small (length: 22 mm) and highly polished.

7.4.5 Prairie Side-Notched Artifact Assemblage (Level #2A): Summary

Very little can be said about the nature of this

TABLE 7.13: Prairie Side-Notched Complex Ceramic Vessels Data, Metric and Non-Metric

ATTRIBUTES	VESSEL #1 ; AREA B, Level #2A
Vessel Shape/Profile	Unknown; likely globular
Vessel Parts	Rim Sherds - 1 Near-rim Sherds - 0 Near-base Sherds - 0 Body Sherds -5
Paste	
Texture	Consistent: compact. Slightly laminated, some exfoliation present
Temper	
Type	Crushed granite (grit)
Size Range	1.0 to 3.0 mm
Lip	
Decoration	Plain - smoothed
Shape	Convex, slightly squared
Rim	
Thickness (range)	6.0 to 6.5 mm (body 9.5 to 10 mm)
Decoration	CWO (paddled) cordage overlaps, has s-twist
Body	
Exterior Surface Finish	Consistent over all areas
Original	CWO (paddled) cordage has s-twist
Secondary	Some smoothing on body
Interior Surface Finish	Smoothed
Vessel Manufacture	Unknown
Vessel Size	Unknown, probably large
Estimated Rim Diameter	Unknown, rim too small
Estimated Vessel Height	Unknown
Other	Interior is heavily carbonized near rim
Figure Number	



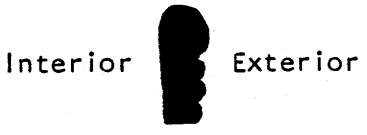


Figure 7.5: Vessel #1, Area B, Level #2A. Profile and Rim (#4S16W-2)

occupation based on its artifact assemblage. Some lithic tool production and hide-working is apparent. Likely the activities only glimpsed here in this irregular area are very similar to those witnessed for the Late Prairie or Plains Side-Notched levels mentioned previously.

7.5 Avonlea Complex

7.5.1 Introduction

The Avonlea Complex occupation is represented by Level #3 in Area A (excavation Units A-1 to A-8, Figure 4.1), and Area B (all excavation units, Figure 4.2), and by Level #4 in Area 5 (excavation units S-1 to S-8, Figure 4.3).

7.5.2 Lithic Assemblage

Area A

The Avonlea Level #3 in Area A was quite prolific in terms of lithic material recovery. A total of 1044 pieces were found. This large amount of material is probably due to the proximity of the hearth feature in Unit A-2, which was undoubtedly a centre of activity for both stone tool manufacture and activities involving the use of lithic artifacts. Thirty of these lithics are tools while 1014 are debitage. The breakdown of lithic tools and debitage by lithic material is shown in Table 7.14, and the lithic tool locations are plotted on Figure 19, Appendix VI.

(1) **Lithic Tools**

There were no sidescrapers, drills or grinding stones recovered from this level.

Projectile Points

There are ten projectile points assigned to Level #3, Area A (Specimen Numbers A-1-33; A-2-1; A-2-21; A-2-48; A-2-122; A-3-16; A-4-17; A-4-29 and A-5-52). Nine are made from Swan River chert and one from brown chalcedony. Four are side-notched, three are triangular, two are represented by tip portions only, and one is a mid-section. Eight of the ten points represented are broken. These eight have unfinished portions suggesting the points broke during manufacture and were never completed. Two of these points were recovered from the surface associated with the outhouse

TABLE 7.14: Area A , Level #3 , Number of Lithic Tools and Debitage by Lithic Material

LITHIC MATERIAL / Tools	Swan River Chert f	%	Knife River Flint f	%	Obsidian f	%	Montana Agate f	%	Pebble Chert f	%	Brown Chert f	%	Black Chert f	%	Limestone Chert f	%	Quartzite f	%
Proj. Points	9	90.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bifaces	5	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
End-scrapers	2	50.0	2	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Side-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Drills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spoke-shaves	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hammer-stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retouched Flakes	4	50.0	3	37.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utilized Flakes	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debitage																		
Cores	4	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prim. Red. Fl.	72	76.6	7	7.5	-	-	-	-	5	5.3	-	-	4	4.3	-	-	1	1.0
Second. Red. Fl.	670	73.1	114	12.5	-	-	2	0.2	11	1.2	-	-	19	2.1	27	3.0	1	0.1
TOTALS	767	73.5	127	12.1	0	0.0	2	0.2	16	1.5	0	0.0	23	2.2	27	2.6	2	0.2

TABLE 7.14: Area A , Level #3 , Number of Lithic Tools and Debitage by Lithic Material (Continued)

LITHIC MATERIAL / Tools	Altered Felsic Lava f	%	Quartz f	%	Clear Chalcedony f	%	Brown Chalcedony f	%	Grey Chalcedony f	%	Basaltic f	%	Porcelainite f	%	Granite f	%	Silicified Sediment f	%	TOTAL f	%
Proj. Points	-	-	-	-	-	-	1	10.0	-	-	-	-	-	-	-	-	-	-	10	1.0
Bifaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	0.5
End-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	0.4
Side-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Drills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.1
Hammer-stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	1	0.1
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Retouched Flakes	-	-	-	-	-	-	-	-	-	-	-	-	1	12.5	-	-	-	-	8	0.8
Utilized Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.1
Debitage																				
Cores	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	0.4
Prim. Red. Fl.	-	-	-	-	-	-	-	-	1	1.1	3	3.2	-	-	-	-	1	1.1	94	9.0
Second. Red. Fl.	-	-	8	0.9	2	0.2	8	0.9	3	0.3	1	0.1	2	0.2	-	-	48	5.2	916	87.6
TOTALS	0	0.0	8	0.7	2	0.2	9	0.9	4	0.4	4	0.4	3	0.3	1	0.1	49	4.7	1044	100.0

backfill and were apparently disturbed when the outhouse was originally excavated. Their metric attributes are recorded in Table 7.15, and the more complete specimens are illustrated in Appendix IV by Specimen Number.

Bifaces

Five bifaces were recovered from Level #3, Area A (Specimen Numbers A-1-35; A-2-19; A-2-62; A-3-7, and A-6-40). All five are made from Swan River chert, each exhibits fractures and all are incomplete. Interestingly, these specimens represent either tips (3) or bodies with tips missing (2). This suggests that stress through use is the cause of the broken state, as those that are fairly complete are well finished and this indicates that the tools were not discarded during manufacture. The biface metric attributes are listed in Table 7.16, and the more complete specimens are illustrated in Appendix IV by Specimen Number.

Endscrapers

There are four endscrapers represented in Level #3, Area A (Specimen Numbers A-1-34; A-2-22; A-4-28, and A-8-20). Two are made from Swan River chert and two from Knife River flint. All are roughly trapezoidal in shape, and all exhibit heavy use-wear on their working edges. Each specimen is complete and all exhibit some degree of thinning on the proximal end, suggesting that these scrapers were hafted and likely discarded after an intensive period of use. The endscraper metrics are recorded in Table 7.17, and all are

Table 7.15: PROJECTILE POINT METRIC ATTRIBUTES* AVONLEA COMPLEX

Specimen Number	AREA	Maximum Length (mm)	Maximum Width (mm)	Maximum Thickness (mm)	Base Width (mm)	Width @ Notches	Weight (g)
A-1-33	A	12.5+	13.4	4.6	11.0	10.0	0,5
A-2-1	A	20.6	12.4	3.2	n/a	n/a	0.6
A-2-21	A	16.8+	11.8	3.4	11.6+	9.9	0.6
A-2-48	A	9.5+	11.3+	1.9+	n/a	n/a	0.1+
A-2-122	A	9.2+	9.5+	1.7+	n/a	n/a	0.1
A-3-16	A	14.1+	11.3+	2.8	n/a	n/a	0.5
A-3-17	A	14 .5	12.5	2.9	12.5	n/a	0.5
A-4-29	A	13.2+	13.5	2.4	11.9+	10.5	0.5
A-5-52	A	23.6	16.2	5.0	14.7	n/a	1.5
A-6-75	A	18.4	11.6	2.8	11.6	n/a	0.5
ON-16W-22	B	24.2	14.7	4.3	13.3	n/a	1.3
ON-18W-23	B	18.2+	15.4	3.9	11.0+	n/a	1.1
4S-18W-7	B	11.2+	10.8+	2.2+	n/a	n/a	0.2+
9S-14W-25	B	14.2+	16.3	3.6	15.6	n/a	1.0
7S-15W-10	B	30.1+	19.1	5.9	n/a	n/a	3.8

*(+) indicates a portion is missing enabling only partial measurements to be taken

Table 7.16: BIFACE METRIC ATTRIBUTES* AVONLEA COMPLEX

Specimen Number	AREA	Maximum Length (mm)	Maximum Width (mm)	Maximum Thickness (mm)	Working Edge Angles D.	V.
A-1-35	A	9.6+	14.0+	4.3	35-40°	50-55°
A-2-19	A	12.2+	10.1+	6.5	55-60°	70-75°
A-2-62	A	20.0+	18.8	7.2	15°	20°
A-3-7	A	16.7+	22.4	5.4	50-60°	50-60°
A-6-40	A	28.5+	20.0	5.5	58°	62°
&S14W-13	B	36.8	25.2	7.7	65°	61°

* (+) indicates a portion is missing enabling only partial measurements to be taken

D - Dorsal

Table 7.17: ENDSCRAPER METRIC ATTRIBUTES* AVONLEA COMPLEX

Specimen Number	AREA	Maximum Length (mm)	Maximum Width (mm)	Maximum Thickness (mm)	Working Edge Angle
A-1-34	A	23.5	25.5	7.7	60^{o}-70^{o}
A-2-22	A	26.2	21.9	8.5	75^{o}-90^{o}
A-4-28	A	22.5	24.0	6.7	84^{o}
A-8-20	A	19.9	21.0	5.3	86^{o}
ON-16W-21	B	32.6	25.0	11.9	78^{o}
5S-13W-4	B	19.7	19.4	4.9	89^{o}
5S-15W-20	B	28.1	22.0	7.0	79^{o}
7S-13W-34	B	n/a	n/a	n/a	70^{o}
8S-13W-14	B	n/a	n/a	n/a	77^{o}
S-3-53	S	22.0	14.9	12.0	75^{o}

* (+) indicates that a portion is missing enabling only partial measurements to be taken

illustrated in Appendix IV by Specimen Number.

Spokeshaves

A single Swan River chert spokeshave (Specimen Number A-5-26) was recovered from Level #3, Area A. This tool was manufactured from a secondary reduction flake in which the distal right lateral edge has been notched bifacially to form an obtuse crescent-shaped area in the straight edge. The notch is 9.5 mm wide and 4.3 mm deep. The interior of the notch does not exhibit any appreciable wear. This artifact is illustrated in Appendix IV by Specimen Number.

Hammerstones

One granitic grooved maul fragment was recovered from Level #3, Area A. This bears a pecked groove. It appears that the groove did not completely encircle the maul. The exterior surface shows a considerable degree of wear suggesting that this tool broke from fatigue and battering. The hammerstone also appears to be slightly fire-cracked.

Marginally Retouched Flakes

There were eight marginally retouched flakes recovered from Level #3, Area A. Four of these were made from Swan River chert, three from Knife River flint and the remaining one is from a grey porcelainite. Two of the retouched flakes are broken diagonally to the working edge suggesting that they broke during use. Three of the retouched flakes are blade-like in appearance indicating a preference for long, narrow flakes that were marginally retouched on the lateral

edges.

Unmodified Utilized Flakes

A single, slender, blade-like Knife River flint flake exhibits wear on its lateral ventral margin, but no sign of retouch. This tool was likely used for a short period of time before it was discarded. The flake is quite thin and, perhaps for this reason, the user chose not to modify the edge further.

(2) **Lithic Debitage**

Cores

Four Swan River chert cores were recovered in Level #3, Area A. Three were fairly complete nodules while the remaining one was a large fragment that may have shattered during flake removal. It would appear that local cobbles of Swan River chert were commonly processed at the site during this occupation to produce stone tools. The distribution of these cores is plotted on Figure 19, Appendix VI.

Primary Reduction Flakes

A total of 94 primary reduction flakes, making up 9% of the total lithic assemblage of Level #3, Area A, were recovered. Swan River chert is the most common material making up 76.6% of all primary reduction flakes. The remaining lithic materials and percentages are listed in Table 7.14. The distribution of primary reduction flakes by number (Figure 20, Appendix VI) and by weight (Figure 21, Appendix VI) is illustrated to show the number and relative distribution of the flakes in Level #3, Area A. It is quite

apparent that the debitage, like the lithic tools, is clustered around the hearth feature.

Secondary Reduction Flakes

As with the primary reduction flakes, Swan River chert is the dominant material type for secondary reduction flakes, making up 73.1% of the total. Secondary reduction flakes, highly indicative of stone tool manufacture, make up 87.6% of the total lithic assemblage for Level #3, Area A. Figures 22 and 23, Appendix VI, respectively, illustrating the frequency and relative distribution by number and weight of the secondary reduction flakes, demonstrate that the heaviest concentration of flakes occurs around the hearth area where much flint-knapping was obviously taking place. This provides evidence that many of the broken points recovered in this level were, in fact, being made at the site and subsequently broke during manufacture rather than use.

(3) **Fire-Cracked Rock**

There were 151 pieces of granitic fire-cracked rock weighing 2888.6 g recovered from Level #3, Area A. The density by number by quarter-meter square of fire-cracked rock is shown in Figure 24, Appendix VI in relation to the hearth feature in Unit A-2.

Area B

There were a total of 396 lithic pieces recovered from Level #3, Area B. Nineteen of these are lithic tools and 337 are debitage. There were also 51 ochre pebbles recovered.

Very few of these appear to have been used, but the large number suggests that the ochre was collected by the Avonlea peoples. The breakdown of lithic tools and debitage by lithic material for Level #3, Area B is illustrated in Table 7.18, and the locations of the lithic tools are plotted on Figure 25, Appendix VI.

(1) **Lithic Artifacts**

There were no drills, spokeshaves or grinding stones recovered from this level.

Projectile Points

A total of five projectile points were recovered from Level #3, Area B. Four of these are of the Avonlea type and are illustrated in Appendix IV by Specimen Number. They include two triangular point Swan River chert bases (9S14W-25 and ON18W-23), a complete Swan River chert triangular point (ON16W-22), and a small Knife River flint tip portion (4S18W-7). The metric attributes of these points are recorded in Table 7.15. Little can be said about the single Knife River flint fragment, except that it exhibits the same fine degree of workmanship present on the rest of the Avonlea points. Each of the triangular specimens is completely finished and it is unlikely that these represent preforms. Interestingly, in the Area B Avonlea occupation only triangular points were recovered. A single grey altered felsic lava point was also recovered from Level #3, Area B. Its context is questionable, being associated with a rodent burrow. The tip

TABLE 7.18: Area B , Level #3 , Number of Lithic Tools and Debitage by Lithic Material

LITHIC MATERIAL / Tools	Swan River Chert f	%	Knife River Flint f	%	Obsidian f	%	Montana Agate f	%	Pebble Chert f	%	Brown Chert f	%	Black Chert f	%	Limestone Chert f	%	Quartzite f	%
Proj. Points	3	60.0	1	20.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bifaces	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
End-scrapers	1	20.0	3	60.0	-	-	-	-	1	20.0	-	-	-	-	-	-	-	-
Side-scrapers	1	33.3	1	33.3	-	-	-	-	1	33.3	-	-	-	-	-	-	-	-
Drills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hammer-stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retouched Flakes	1	25.0	3	75.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utilized Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debitage																		
Cores	7	87.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prim. Red. Fl.	48	63.2	3	4.0	-	-	-	-	10	13.2	-	-	1	1.3	-	-	1	1.3
Second. Red. Fl.	196	70.0	58	19.8	-	-	3	1.0	3	1.0	14	4.8	2	0.7	3	1.0	2	0.7
TOTALS	258	65.2	69	17.4	0	0.0	3	0.8	15	3.8	14	3.5	3	0.8	3	0.8	1	0.3

TABLE 7.18: Area B , Level #3 , Number of Lithic Tools and Debitage by Lithic Material (Continued)

LITHIC MATERIAL / Tools	Altered Felsic Lava f	%	Quartz f	%	Clear Chalcedony f	%	Brown Chalcedony f	%	Grey Chalcedony f	%	Basaltic f	%	Porcelainite f	%	Granite f	%	Silicified Sediment f	%	TOTAL f	%
Proj. Points	1	20.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	1.3
Bifaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.3
End-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	1.3
Side-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	0.8
Drills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Hammer-stones	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	1	0.3
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Retouched Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	1.0
Utilized Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Debitage																				
Cores	-	-	1	12.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	2.0
Prim. Red. Fl.	-	-	1	1.3	-	-	11	14.4	-	-	1	1.3	-	-	-	-	-	-	76	19.1
Second. Red. Fl.	-	-	-	-	5	1.7	1	0.3	-	-	2	0.7	3	1.0	-	-	-	-	293	73.9
TOTALS	1	0.3	2	0.5	5	1.3	12	3.0	0	0.0	4	1.0	3	0.8	0	0.0	0	0.0	396	100.0

and extreme basal portions are missing. The latter end bears the remnants of an indented base and two ear-like projections. The point, overall, seems to have been finished. It closely resembles a McKean-type point in overall outline and form. It may be that this point originated in a lower level at the site, presumably Level #7 - where the dates are old enough for a Late McKean occupation. No other McKean-like points were recovered in the excavations.

Bifaces

A single Swan River chert biface (7S14W-13) was recovered from the Avonlea occupation. It is triangular in shape and worked on both the lateral and distal lateral edges. The metric attributes are recorded in Table 7.16.

Endscrapers

Five endscrapers were recovered in Level #3, Area B. Three are complete specimens while two are represented by fragments only. Specimen Number 5S13W-4 is a complete endscraper made from Knife River flint. It has three working edges (distal, right and left lateral), all of which exhibit signs of wear. Specimen Number ON16W-21 is larger and also made from Knife River flint. It is finely worked, triangular in shape, with one working edge on the distal end. The third Knife River flint specimen (8S13W-14) is a tiny working edge fragment, apparently broken during use. Two endscrapers, one made from Swan River chert and the other from pebble chert,

were also recovered. The Swan River chert endscraper (5S15W-20) is complete, trapezoidal in shape and exhibits heavy use-wear on its single working edge (distal). The pebble chert endscraper is a lateral edge fragment and appears to have been broken perpendicular to the main working edge. Signs of use-wear are minimal on this specimen. The metric attributes of these endscrapers are recorded in Table 7.17. Two complete endscrapers are illustrated in Appendix IV by Specimen Number.

Sidescrapers

Three sidescrapers - one each of pebble chert (7S14W-26), Knife River flint (7S14W-12) and Swan River chert (9S13W-12) were recovered in Level #3, Area B. The pebble chert specimen appears to have been manufactured from a split pebble using a bi-polar reduction technique. One edge, the left dorsal, is completely worked unifacially and exhibits some use-wear. The Swan River chert specimen is made from a large decortication flake and is worked on both lateral dorsal edges as well as the distal dorsal margin. Some use-wear is evident on all three margins. The Knife River flint specimen is made from a secondary reduction flake and is worked only on the left dorsal margin where a steep working edge has been formed incorporating the flake's thick spine. This specimen exhibits a good deal of use-wear along its working edge. These artifacts are illustrated in Appendix IV by Specimen Number and their metric attributes are listed in

Table 7.19.

Hammerstones

A single basaltic, flat disk-shaped hammerstone was recovered from Level #3, Area B. It exhibits battering along the outside margins indicating that it may have been used for flint-knapping purposes.

Marginally Retouched Flakes

Four marginally unifacially retouched flakes were recovered in Level #3, Area B. All are manufactured from secondary reduction flakes: three of Knife River flint and one of Swan River chert. All of the specimens are quite small. The Swan River chert specimen is only worked on one lateral edge, but two of the three Knife River flint specimens have been worked on two margins suggesting an effort to make maximum use of this preferred lithic material.

(2) **Lithic Debitage**

Cores

There are eight cores represented in Level #3, Area B. Seven are of Swan River chert while the remaining core is of quartz. All materials may be considered locally obtainable in the glacial till along the Qu'Appelle Valley. The cores indicate that most stages of lithic processing were being undertaken by the Avonlea peoples at Lebret. The distribution of these cores is plotted on Figure 25, Appendix VI.

Table 7.19: SIDESCRAPER METRIC ATTRIBUTES* AVONLEA COMPLEX

Specimen Number	AREA	Maximum Length (mm)	Maximum Width (mm)	Maximum Thickness (mm)	Working Edge Angle
7S-14W-12	B	29.0	17.7	4.8	73°
7S-14W-26	B	24.0	16.4	5.0	60°
9S-13W-12	B	38.0	23.1	6.8	66°
S-3-39	S	23.9	34.0	6.3	70°

* (+) indicates that a portion is missing enabling only partial measurements to be taken

Primary Reduction Flakes

As one would expect from the number of cores present, there are a large number of primary reduction flakes in Level #3, Area B. At 19.1% of the entire lithic assemblage for this level, they make up nearly one artifact out of every five recorded. The distribution by number and weight recorded in Figures 26 and 27, Appendix VI, respectively indicates that core reduction was fairly common over the site area excavated. Swan River chert makes up 63.2% of all primary reduction flakes (which is expected given the large percentage of Swan River chert cores).

Secondary Reduction Flakes

A fairly even distribution by number and weight of secondary reduction flakes is evident in Figures 28 and 29, Appendix VI, respectively. Secondary reduction flakes make up the largest category in the Avonlea assemblage in Area B, comprising 73.9% of the total lithic assemblage. Swan River chert makes up 70.0% of these flakes, but a non-local material, Knife River flint, makes up 19.8% of all secondary reduction flakes. This suggests that re-working of artifacts made of this fine material may have been a common practice in order to conserve this less high quality, low quantity lithic resource.

(3) **Fire-Cracked Rock**

There were 619 pieces of granitic fire-cracked rock weighing 36,941.9 g recovered from Level #3, Area B. The

density by number is illustrated in Figure 30, Appendix VI.

Area S

In Level #4, Area S there were a total of 59 lithic pieces recovered. Of these, four pieces are lithic tools and 55 pieces are debitage. Four ochre pebbles were also recovered. The breakdown of lithic tools and debitage by lithic material for Level #4, Area S is recorded in Table 7.20, and the location of the lithic tools is plotted on Figure 31, Appendix VI.

(1) **Lithic Tools**

There were no projectile points, bifaces, sidescrapers, drills, spokeshaves or hammerstones recovered from this level.

Endscrapers

A single brown chalcedony endscraper (S-3-53) was recovered from Level #4, Area S. It is slightly different from the previously recorded Avonlea endscrapers in other areas. This, however, may be largely due to the size of flake that was used to make this tool. It has a single, distally located working edge that shows evidence of heavy use-wear. The proximal end is also thinned, apparently for hafting purposes. The metric attributes of this endscraper are recorded in Table 7.17, and it is illustrated in Appendix IV by Specimen Number.

Grinding Stones

A single granitic grinding stone (S-3-40), showing signs

of wear on two surfaces, was recovered from Level #4, Area S. The grinding stone is hand-sized and was probably used to grind or crush food such as berries or nuts. It resembles a mano in several respects. Other than the apparently worn surfaces, the cobble is unmodified.

Marginally Retouched Flakes

Two marginally retouched flakes, one of Montana Agate and one of Swan River chert, were recovered from Level #4, Area S. The Montana Agate specimen exhibits retouch on both lateral dorsal margins, with some use-wear evident. The Swan River chert flake is modified only on one lateral dorsal margin and also exhibits some use-wear on its working edge.

(2) **Lithic Debitage**

Cores

Three cores, one of Swan River chert, one of pebble chert, and one basaltic, were recovered from Level #4, Area S. Their locations are mapped on Figure 31, Appendix VI.

Primary Reduction Flakes

Sixteen primary reduction flakes, making up 26.8% of the total lithic assemblage, were recovered from Level #4, Area S. Their distribution by number and by weight is recorded on Figures 32 and 33, Appendix VI, respectively.

Secondary Reduction Flakes

Thirty-six secondary reduction flakes were recovered from Level #4, Area S. Their frequencies and lithic material breakdowns are recorded in Table 7.20. The distribution of

TABLE 7.20: Area S , Level #4 , Number of Lithic Tools and Debitage by Lithic Material

LITHIC MATERIAL	Swan River Chert		Knife River Flint		Obsidian		Montana Agate		Pebble Chert		Brown Chert		Black Chert		Limestone Chert		Quartzite	
Tools	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Proj. Points	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bifaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
End-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Side-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Drills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hammer-stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retouched Flakes	1	50.0	-	-	-	-	1	50.0	-	-	-	-	-	-	-	-	-	-
Utilized Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debitage																		
Cores	1	33.3	-	-	-	-	-	-	1	33.3	-	-	-	-	-	-	-	-
Prim. Red. Fl.	7	43.7	2	12.2	-	-	-	-	-	-	1	6.3	1	6.3	-	-	1	6.3
Second. Red. Fl.	22	61.1	8	22.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTALS	31	52.5	10	16.9	0	0.0	1	1.7	1	1.7	1	1.7	1	1.7	0	0.0	1	1.7

TABLE 7.20: Area S , Level #4 , Number of Lithic Tools and Debitage by Lithic Material (Continued)

LITHIC MATERIAL	Altered Felsic Lava		Quartz		Clear Chalcedony		Brown Chalcedony		Grey Chalcedony		Basaltic		Porcelainite		Granite		Silicified Sediment		TOTAL	
Tools	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Proj. Points	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Bifaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
End-scrapers	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	1	1.8
Side-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Drills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Hammer-stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	1	1.8
Retouched Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3.3
Utilized Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Debitage																				
Cores	-	-	-	-	-	-	-	-	-	-	1	33.3	-	-	-	-	-	-	3	5.1
Prim. Red. Fl.	-	-	-	-	-	-	2	12.4	-	-	1	6.3	1	6.3	-	-	-	-	16	26.8
Second. Red. Fl.	-	-	1	2.8	-	-	5	13.9	-	-	-	-	-	-	-	-	-	-	36	61.2
TOTALS	0	0.0	1	1.7	0	0.0	8	13.6	0	0.0	2	3.4	1	1.7	1	1.7	0	0.0	60	100.0

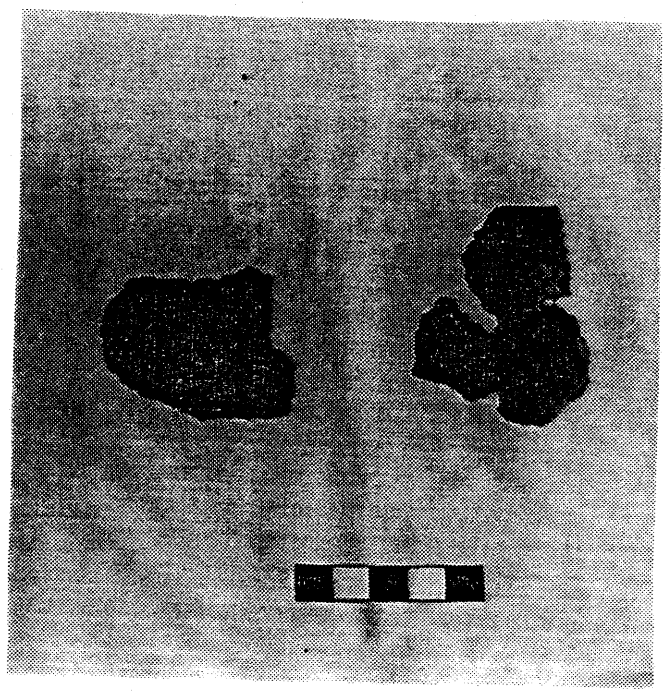
secondary reduction flakes by number and weight are recorded in Figures 34 and 35, Appendix VI, respectively.

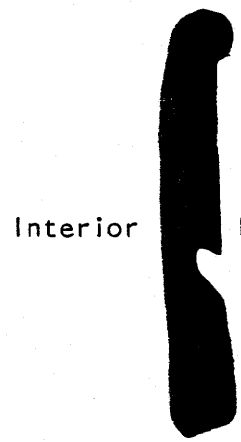
(3) **Fire-Cracked Rock**

There were 55 granitic pieces of fire-cracked rock (Figure 36, Appendix VI), weighing 6424.2 g, recovered from Level #4, Area S.

7.5.3 Ceramic Assemblage

There are a total of 430 potsherds (11 rim sherds, 419 body sherds) representing a minimum of seven vessels in the Avonlea complex from the Lebret site. At least four of these vessels (Numbers 1, 2, 6, 7) and possibly two more (Numbers 3, 5) are full-sized cooking vessels, but one (Vessel #4) is a smaller, bowl-shaped vessel (Figure 7.6, Table 7.21). This specimen does not represent a miniature vessel, but rather a shallow bowl that is likely comparable in diameter (although this is uncertain) to the larger vessels. Most of the vessels exhibit smoothed-over net-impressions on the body surface, although the smoothing is not as evident near the vessel lip. Several sherds exhibit upwardly-angled, irregularly-shaped exterior punctates with slight internal bosses, apparently in a single row around the rim area. One vessel (Number 3) from Area A, Level #3, exhibits faint parallel lines that may be the result of a cord-wrapped object (CWO) being pressed or paddled on to the exterior surface. This is reminiscent of the obvious CWO impression found in the Prairie Side-Notched Vessel #1 in Level #2A,

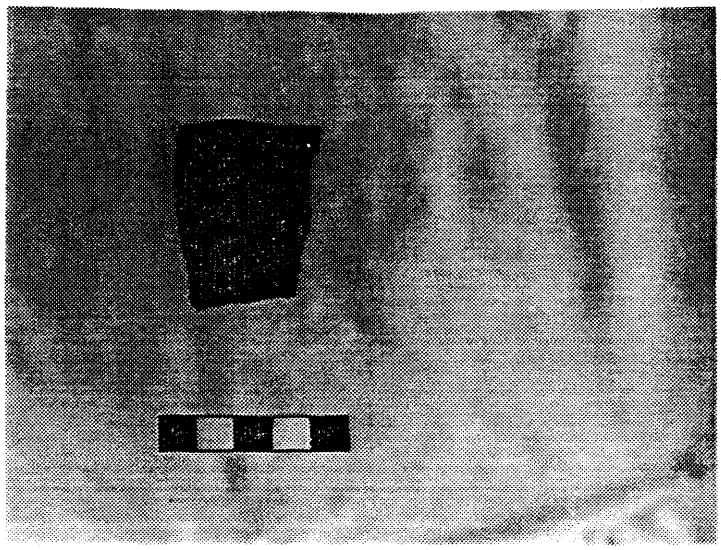


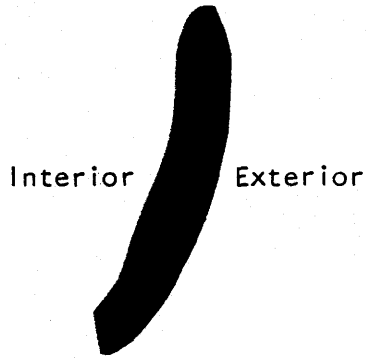


Vessel #1, Area A, Level #3, Avonlea, Rim #A-2-72

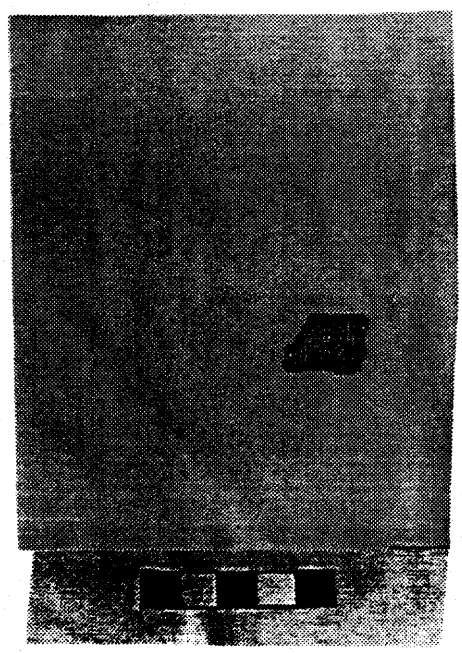
Vessel #2, Area A, Level #3, Avonlea, Rim #A-1-6

Figure 7.6: Avonlea Complex Ceramic Vessels/Profiles Scale = 5 cm





Vessel #4, Area B, Level #3, Avonlea, Rim #7S-15W-14



Vessel #7, Area B, Level #3, Avonlea, Rim #0N-18W-18

Figure 7.6: Avonlea Complex Ceramic Vessels/Profiles (continued)
Scale = 5 cm

TABLE 7.21: Avonlea Complex Ceramic Vessels Data, Metric and Non-Metric

ATTRIBUTES	VESSEL # 1 ; AREA A , Level #3	VESSEL # 2; AREA A, Level #3
Vessel Shape/Profile	Conoidal; straight-walled	Conoidal; straight-walled
Vessel Parts	Rim Sherds - 7 Near-rim Sherds - 5 Near-base Sherds -5 Body Sherds - 309	Rim Sherds - 1 Near-rim Sherds - 0 Near-base Sherds -0 Body Sherds - 5
Paste Texture	Consistent, exfoliation rare, some sherds friable	Consistent: compact exfoliation rare
Temper Type Size Range	 Crushed granite (grit) Variable: 0.25 to 4.0 mm	 Crushed granite (grit) Variable: 0.25 to 1.5 mm
Lip Decoration Shape	 Plain, smoothed Slightly everted	 Plain, smoothed Squared, slightly thickened with bevelled interior
Rim Thickness (range) Decoration	 6.0 to 8.0 mm Upward angled punctates 31.5 mm below lip, spacing 19.5 mm, dimensions 4.9mm diameter, 2.5 mm deep, interior bosses	 5.5 to 7.5 mm No decoration visible
Body Exterior Surface Finish Original Secondary	 Inconsistent over vessel body Net impressed Heavily smoothed	 Consistent over vessel body Net impressed Heavily smoothed
Interior Surface Finish	Horizontal wiping	Smoothed
Vessel Manufacture	Uncertain, possibly coiled	Unknown
Vessel Size	Unknown	Unknown
Estimated Rim Diameter	Unknown, rim sherds too small	Unknown, rim sherd too small
Estimated Vessel Height	Unknown	Unknown
Other	Interior slightly carbonized	Interior slightly carbonized
Figure Number		

TABLE 7.21: Avonlea Complex Ceramic Vessels Data, Metric and Non-Metric (continued)

ATTRIBUTES	VESSEL #3 ; AREA A, Level #3	VESSEL #4 ; AREA B, Level #3
Vessel Shape/Profile	Unknown; likely conoidal	Round; shallow bowl
Vessel Parts	Rim Sherds - 0 Near-rim Sherds - 0 Near-base Sherds -0 Body Sherds -7	Rim Sherds - 1 Near-rim Sherds - 0 Near-base Sherds -1 Body Sherds - 2
Paste		
Texture	Slightly laminated, exfoliation present on some sherds	Consistent: compact, no exfoliation present
Temper		
Type	Crushed granite (grit)	Crushed granite (grit)
Size Range	0.5 to 4.0 mm	0.5 to 2.0 mm
Lip		
Decoration	Unknown	Plain, roughly smoothed
Shape	Unknown	Convex, slightly squared
Rim		
Thickness (range)	Unknown	7.5 to 9.5 mm
Decoration	Unknown	No decoration present
Body		
Exterior Surface Finish	Consistent over vessel surface	Consistent over vessel surface
Original	Unknown	Obliterated
Secondary	Heavily smoothed with faint parallel lines present	Heavily smoothed
Interior Surface Finish	Roughly smoothed	Roughly smoothed
Vessel Manufacture	Unknown	Unknown
Vessel Size	Unknown	Unknown, probably small
Estimated Rim Diameter	Unknown	Unknown, rim sherd too small
Estimated Vessel Height	Unknown	Unknown, but likely under 15 cm
Other	No carbonization present on any sherd surfaces	Heavily carbonized on both interior and exterior surfaces
Figure Number		

TABLE 7.21: Avonlea Complex Ceramic Vessels Data, Metric and Non-Metric (continued)

ATTRIBUTES	VESSEL # 5; AREA S, Level #4	VESSEL # 6; AREA B, Level #3
Vessel Shape/Profile	Unknown; likely conoidal	Unknown; likely conoidal
Vessel Parts	Rim Sherds - 0 Near-rim Sherds - 0 Near-base Sherds -0 Body Sherds -7	Rim Sherds - 1 Near-rim Sherds - 0 Near-base Sherds -0 Body Sherds - 42
Paste		
Texture	Consistent: slightly laminated, exfoliation present on some sherds	Slightly laminated, exfoliation present
Temper		
Type	Crushed granite (grit)	Crushed granite (grit)
Size Range	1.5 to 3.0 mm	0.25 to 2.0 mm
Lip		
Decoration	Unknown, no lip areas present	No decoration present
Shape		Convex
Rim		
Thickness (range)	Unknown, no rim areas present	6.0 to 6.2 mm
Decoration		No decoration present
Body		
Exterior Surface Finish	Consistent over vessel body	Consistent over vessel body
Original	Net-impressed	Net-impressed
Secondary	Irregular smoothing	Smoothing
Interior Surface Finish	Smoothed	Smoothed
Vessel Manufacture	Unknown	Unknown
Vessel Size	Unknown	Unknown
Estimated Rim Diameter	Unknown, no rims present	Unknown, rim too small
Estimated Vessel Height	Unknown	Unknown
Other	No carbonization present on any sherds	Exterior slightly carbonized
Figure Number		

TABLE 7.21: Avonlea Complex Ceramic Vessels Data, Metric and Non-Metric (continued)

ATTRIBUTES	VESSEL #7 ; AREA B, Level #3
Vessel Shape/Profile	Unknown; likely conoidal
Vessel Parts	Rim Sherds - 1 Near-rim Sherds - 0 Near-base Sherds -0 Body Sherds -36
Paste	
Texture	Consistent: compact. No exfoliation present
Temper	
Type	Crushed granite (grit)
Size Range	0.25 to 4.0 mm
Lip	
Decoration	Plain - smoothed
Shape	Convex, slightly everted
Rim	
Thickness (range)	7.0 to 7.8 mm
Decoration	Circular punctate 15 mm below lip; spacing, unknown; depth, 20 mm; diameter, 2.5 mm
Body	
Exterior Surface Finish	Consistent over body surface
Original	Net-impressed
Secondary	Smoothing
Interior Surface Finish	Horizontal wiping
Vessel Manufacture	Unknown
Vessel Size	Unknown, probably large
Estimated Rim Diameter	Unknown, rim too small
Estimated Vessel Height	Unknown
Other	No carbonization present on any sherds
Figure Number	

Area B. Given that these two occupations, the Area A, Level #3, Avonlea occupation and the Prairie Side-Notched, Level #2A, are close in date, it may indicate that the Late Avonlea was beginnning to adopt this exterior finishing technique seen later in the Prairie Side-Notched Complex ceramics. This also occurs on one vessel at the Avonlea site (Hanna 1985:3-13, in Klimko 1985b).

The other Avonlea ceramics from Lebret are similar to Avonlea ceramics from the Garratt site (EcNj-7) in overall body shape, surface finish and decoration (Morgan 1979; Kroszer 1986, personal communication). It is notable that the Lebret site Avonlea ceramics are not very similar to those found at the Avonlea-type site (EaNg-1) where a grooved paddle surface finish is present on the vessel exteriors. While Vessel #3 appears to have smoothed-over grooves or parallel lines, these are unlike the ceramics from the Avonlea-type site (Hanna 1985:B-14, in Klimko 1985b). The presence of upwardly-angled punctates is similar to those that have been found on net-impressed Avonlea ceramics in the Nipawin area (D. Meyer 1985, personal communication) and at another Avonlea site, the Goosen Pasture site (FbNs-15), just west of Saskatoon (Smith 1984). In most other respects, the Avonlea ceramic assemblage is quite similar to most Avonlea ceramics in overall shape and paste characteristics. The presence of a bowl may be slightly unusual, but bowls occur at both the Wallington Flat and Crown sites in the Nipawin

area (D. Meyer 1986, personal communication). It is unclear what the function of this vessel might be, but it was certainly the most heavily carbonized vessel among the seven indicating that it too is a cooking vessel of some description.

Two lumps of clay with grit temper particles were also recovered. These clay lumps were not fired but likely were quite near to the large hearth feature in Area A. It is possible that these represent remnants that were trimmed from a ceramic vessel as it was being manufactured (M. Hanna 1986, personal communication).

7.5.4 Organic Assemblage

Area A

Three bone artifacts were recovered from Level #3, Area A. There were no fleshers, needles, beads, fish spears or awls/punches recovered from this level.

Miscellaneous

Specimen Number A-8-14 is a tip fragment of a larger bone tool such as an awl or punch, or possibly even a fish spear. It is not possible to determine the exact nature of this tool fragment due to its small size (length: 29 mm). The exterior worked surface, however, is dull and not highly polished as is common to awls, needles, or other hide-working implements.

Specimen Number A-4-18, is the proximal end of some kind of well-used tool. It is blunt, squared, and fairly well-

polished. However, it is too fragmentary (length: 22 mm) to be identified.

Specimen Number A-8-20 is a single human 2nd phalange. It is from an adult individual and the proximal end has been drilled through laterally to produce a pendant. No other signs of wear or further alteration are present on this specimen. The drilled hole is circular and 3.9 mm in diameter. Obviously this was a special pendant of some kind. This specimen is illustrated in Appendix V by Specimen Number.

Area B

Twelve bone tools were recovered from Level #3, Area B. Several of the more complete artifacts are illustrated in Appendix V by Specimen Number. There were no beads or awls/punches recovered from this level.

Fleshers

Specimen Number 5S15W-9 is made from a bison metatarsal midshaft. The distal end has been cut or modified to form a blunt end. This tool is 119 mm in length, 36 mm in width and was likely used as a fleshing tool.

Specimen Number 7S14W-10 is a toothed rib flesher tip. This tool obviously broke during use.

Specimen Number 7S13W-7 is another small, unidentifiable polished bone fragment. It is a rib fragment and has been worked to a pointed tip. It may be a flesher, but this is uncertain.

Needles

Specimen Number 0N16W-2 is the tip fragment of a bone needle. It is finely worked and highly polished and is 22 mm in length and 3.5 mm wide at its widest portion.

Fish Spears

Specimen Number 9S14W-12 is a fish spear tip. It is made from the long bone of a large- to medium-sized mammal. It has been carved into a thin, sharp point and is broken with no barbs present. It is 37 mm in length and 9 mm in width at its widest point.

Specimen Number 9S14W-13 is likely a fish spear fragment. The remnant of a barbed notch is located near one end of this slender, straight, but incomplete, bone tool.

Specimen Number 9S14W-11 is a pointed rib fragment that may be a fish spear point, although it is rather blunt. This tool is also broken and is only 48 mm in length and 12 mm at its maximum width.

Miscellaneous

Specimen Number 4S16W-3 is a shaft fragment of a highly polished bone tool. This portion is 36 mm in length and 9 mm in width at its widest point. This may be a fish spear, but this is not certain.

Specimen Number 7S13W-10 is a small (length: 14 mm; width 7 mm) highly polished portion of a shaft of some unidentifiable tool.

Specimen Number 9S15W-15 is a mammal rib bone tool.

This is also an incomplete specimen. This portion of the rib was made into a blunt point. It is unidentifiable.

Specimen Number 4S16W-6 is a bison rib that has been modified at one end for some unknown purpose. The end has been rounded to form a very blunt point. This tool has been broken and is 100 mm in length.

Specimen Number 9S15W-12 is a long bone fragment that has been tapered to a dull point. The pointed end is rounded and highly polished. This may be a bone knife of some description. It is 74 mm in length and 28 mm wide at its widest portion.

Area S

There were two organic artifacts, one bone and one shell, recovered from Level #4, Area S. There were no fleshers, needles, beads, fish spears or awls/punches recovered from this level.

Miscellaneous

Specimen Number S-1-30 is a bone tool made from a broad, flat bone (probably bison). One edge is highly polished and worn. The function of this artifact is unknown.

Shell Artifacts

Spoons

Specimen Number S-5-13 is a freshwater clam shell artifact. The shell has apparently been cut and the two edges ground smooth. This may be a shell spoon or a piece of shell that was discarded during manufacture of other shell

items.

7.5.5 Features

Feature Number A-3-1 is an ash-filled fire hearth in Unit A-2 (Figure 7.7) in Level #3, Area A. The hearth is basin-shaped, and its greatest depth was 20 cm. This feature appears to be the remains of a large cooking fire that had been used for a considerable time. The hearth and surrounding area contained charred mammal, bird and fish bone, as well as potsherds, lithic tools and lithic debitage. The hearth was in good condition despite a small amount of rodent and root disturbance indicating that Level #3, Area A, as a whole, had not been subject to major forms of disturbance or erosion.

7.5.6 Avonlea Complex Artifact Assemblage: Summary

The Avonlea artifact assemblage indicates that a variety of activities such as lithic tool manufacture, hide processing and hide-working, butchering, food preparation and cooking were taking place. These activities are most common around the large hearth feature in Area A (Figure 7.1). Most notable is the production of lithic tools from local materials, especially projectile points, as witnessed by 8 of 10 unfinished points from Area A. The organic assemblage consists mainly of hide processing tools such as fleshers or hide-working tools such as needles for sewing. Fishing spears, likely used to aid in the retrieval of fish from traps, point to a subsistence partially based on fishing.

Figure 7.7: Fire Hearth, Unit A-2, Level #3, Feature A-3-1

The single grinding stone from Area S indicates that the preparation of vegetable matter was also being undertaken. The ceramic assemblage provides evidence that both ceramic production and cooking in ceramic vessels was taking place.

7.6 Cultural Level #4(?), Area B

7.6.1 Introduction

It is unclear whether or not this represents an actual occupation in Area B (excavation units 7S 13W, 7S 14W, 8S 13W, 8S 14W, 9S 13W, and 9S 14W, Figure 4.2). The artifacts from this level are quite sparse and may represent intrusive items from occupations located above or below this stratigraphic layer. No ceramics, organic artifacts or features were associated with this level.

7.6.2 Lithic Assemblage

The lithic materials are not different from those present in other levels. The breakdown of lithic remains by lithic materials is shown in Table 7.22.

(1) Lithic Tools

No lithic tools of any description were recovered in this level.

(2) Lithic Debitage

Two Swan River chert primary reduction flakes and four Swan River chert secondary reduction flakes make up the entire lithic assemblage of Level #4(?) in Area B. They are shown in relation to the lithic material on Table 7.22.

TABLE 7.22: Area B , Level 4(?), Number of Lithic Tools and Debitage by Lithic Material

LITHIC MATERIAL	Swan River Chert		Knife River Flint		Obsidian		Montana Agate		Pebble Chert		Brown Chert		Black Chert		Limestone Chert		Quartzite	
Tools	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Proj. Points	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bifaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
End-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Side-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Drills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hammer-stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retouched Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utilized Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debitage																		
Cores	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prim. Red. Fl.	2	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Second. Red. Fl.	4	66.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTALS	6	75.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

TABLE 7.22: Area B , Level 4(?), Number of Lithic Tools and Debitage by Lithic Material (Continued)

LITHIC MATERIAL	Altered Felsic Lava		Quartz		Clear Chalcedony		Brown Chalcedony		Grey Chalcedony		Basaltic		Porcelainite		Granite		Silicified Sediment		TOTAL	
Tools	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Proj. Points	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Bifaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
End-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Side-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Drills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Hammer-stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Retouched Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Utilized Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Debitage																				
Cores	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Prim. Red. Fl.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	25.0
Second. Red. Fl.	-	-	-	-	2	33.3	-	-	-	-	-	-	-	-	-	-	-	-	6	75.0
TOTALS	0	0.0	0	0.0	2	25.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	8	100.0

7.6.3 Artifact Assemblage Level #4(?): Summary

Very little can be said about the cultural activities associated with this occupation. The lithic debitage suggests that some tool manufacture has taken place.

7.7 Cultural Level #5: Unknown Occupation (Besant Complex?), Area B

7.7.1 Introduction

Level #5, Area B (excavation units 7S 13W, 7S 14W, 8S 13W, 8S 14W, 9S 13W, and 9S 14W, Figure 4.2) is unknown culturally given the lack of a good date diagnostic items. from this level. There were no ceramics, organic artifacts or features associated with this level.

7.7.2 Lithic Assemblage

A total of 25 lithic pieces were recovered from Level #5, Area B. Three of these pieces, two bifaces and one hammerstone, are lithic tools and 22 are lithic debitage. The breakdown of lithics by material is shown in Table 7.23, and the distribution of lithic tools is illustrated in Figure 37, Appendix VI.

(1) **Lithic Tools**

No projectile points, endscrapers, sidescrapers, drills, spokeshaves, grinding stones, marginally retouched flakes or unmodified utilized flakes were recovered from this level.

Bifaces

Two brown chalcedony biface fragments were recovered from separate 1 x 1 m square units. Although they do not match, the flaking and material is so similar that it is

TABLE 7.23: Area B , Level #5 , Number of Lithic Tools and Debitage by Lithic Material

LITHIC MATERIAL	Swan River Chert		Knife River Flint		Obsidian		Montana Agate		Pebble Chert		Brown Chert		Black Chert		Limestone Chert		Quartzite	
Tools	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Proj. Points	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bifaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
End-scrapers	-	-	-	-	-	-	-	-	2	100.0	-	-	-	-	-	-	-	-
Side-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Drills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hammer-stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retouched Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utilized Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debitage																		
Cores	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prim. Red. Fl.	1	25.0	1	25.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Second. Red. Fl.	12	66.7	1	5.6	-	-	-	-	2	11.1	-	-	-	-	-	-	-	-
TOTALS	13	52.0	2	8.0	0	0.0	0	0.0	4	16.0	0	0.0	0	0.0	0	0.0	0	0.0

TABLE 7.23: Area B , Level #5 , Number of Lithic Tools and Debitage by Lithic Material (Continued)

LITHIC MATERIAL	Altered Felsic Lava		Quartz		Clear Chalcedony		Brown Chalcedony		Grey Chalcedony		Basaltic		Porcelainite		Granite		Silicified Sediment		TOTAL	
Tools	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Proj. Points	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Bifaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
End-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	8.0
Side-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Drills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Hammer-stones	-	-	-	-	-	-	-	-	-	-	1	100.0	-	-	-	-	-	-	1	4.0
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Retouched Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Utilized Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Debitage																				
Cores	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Prim. Red. Fl.	-	-	-	-	-	-	2	50.0	-	-	-	-	-	-	-	-	-	-	4	16.0
Second. Red. Fl.	-	-	-	-	-	-	3	16.6	-	-	-	-	-	-	-	-	-	-	18	72.0
TOTALS	0	0.0	0	0.0	0	0.0	5	20.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	25	100.0

likely they are fragments of the same tool. Both fragments are quite small, but they suggest the tool was a finely-worked ovoid specimen. It is also possible that these may also represent mid-sections of a projectile point blade. It is likely that this tool was broken during manufacture as one lateral edge is unfinished. The metric attributes of these biface fragments are are listed in Table 7.24.

Hammerstones

A single small basaltic cobble with battering and pecking marks encircling the exterior was recovered from Level #5, Area B. It is likely that this specimen was used for flint-knapping.

(2) **Lithic Debitage**

Primary Reduction Flakes

A total of four primary reduction flakes were recovered from Level #5, Area B. Two were brown chalcedony, the remaining two are a Swan River chert and a Knife River flint flake. Very little may be said about such a small sample. Their distribution by number and weight is recorded in Figures 38 and 39, Appendix VI, respectively.

Secondary Reduction Flakes

Eighteen secondary reduction flakes were recovered from Level #5, Area B. Their distribution by number and weight is recorded in Figures 40 and 41, Appendix VI, respectively. Swan River chert makes up 66.7% of these flakes.

Table 7.24: BIFACE METRIC ATTRIBUTES* POSSIBLE BESANT COMPLEX

Specimen Number	AREA	Maximum Length (mm)	Maximum Width (mm)	Maximum Thickness (mm)	Working Edge Angles D.	V.
9S4W-36	B	15.3+	19.5+	4.3+	68°	53°
9S15W-37	B	8.2+	20.3+	4.6+	40°	59°

* (+) indicates a portion is missing enabling only partial measurements to be taken

D - Dorsal
V - Ventral

(3) **Fire-Cracked Rock**

There were 32 pieces of granitic fire-cracked rock (Figure 41, Appendix VI), weighing 2326.2 g recovered from Level #5, Area B.

7.7.3 Artifact Assemblage: Unknown Occupation (Besant Complex?), Level #5, Area B: Summary

Very little can be said about the cultural activities associated with this small sample of materials. It is apparent, however, that some lithic tool production was undertaken.

7.7.4 Late Plains Indian Period Artifact Assemblage: Summary

The artifact assemblages from the Late Plains Indian Period at Lebret indicate that a variety of campsite activities were being repeated throughout the occupations. It is noteworthy that the activities remain constant, although the site contains a number of different cultural complexes and has been occupied by culturally different peoples over time.

It seems that while at the site, these peoples were engaged primarily in lithic tool manufacture, ceramic production, hide processing (e.g. hide fleshing and scraping), hide-working (e.g., sewing), butchering, and food preparation. The artifact assemblage also indicates that fishing was a constant subsistence activity. The overall impression is that the Lebret site was used by peoples that were preparing and repairing their cultural assemblage before

travelling to other areas to undertake different activities.

The activities represented by the artifact assemblages would require that several weeks or even months be spent at the site. This would allow enough time to collect and process the raw materials needed to refurbish these peoples' material culture with such items as projectile points and ceramic vessels. These activities probably occurred in the spring as the occupants readied themselves for the upcoming summer bison hunts on the Grasslands.

8.0 MIDDLE PLAINS INDIAN PERIOD ARTIFACT ASSEMBLAGE DESCRIPTION BY CULTURAL LEVEL

8.1 Introduction

The Middle Plains Indian period begins around 7700 B.P. (Dyck 1983:87). While the earliest complexes of this period do not occur at Lebret, two occupations, the Sandy Creek Complex occupation (Area A and Area B), and an unidentified Middle Plains Indian Period occupation (not to be confused with the Un-Named Complex after Dyck 1983:107), that may be a Late Oxbow, Late McKean, Pelican Lake, or perhaps an early Sandy Creek occupation (Area B) are identified as belonging to this period. The artifact assemblages of these occupations are discussed in this chapter. The artifact assemblage consists of lithics and organic artifacts, as this period predates the use of ceramics in southern Saskatchean.

8.2 Sandy Creek Complex

8.2.1 Introduction

The Sandy Creek Complex is represented in Level #4 in Area A (excavation units A-1 to A-8, Figure 4.1) and in Area B (excavation units 7S 13W, 7S 14W, 8S 13W, 8S 14W, 9S 13W, and 9S 14W, Figure 4.2). There were no features associated with either area.

Area A

8.2.2 Lithic Assemblage

There were a total of 83 lithic pieces recovered from Level #4, Area A. Ten of these are lithic tools and 73 are debitage. Three ochre pebbles were also recovered. The

breakdown of lithic tools and debitage for Level #4, Area A is shown in Table 8.1. The location of the lithic tools is illustrated in Figure 43, Appendix VI.

(1) **Lithic Tools**

There were no sidescrapers, drills, spokeshaves, hammerstones, grinding stones or unmodified utilized flakes recovered from this level.

Projectile Points

Two Swan River chert projectile points were recovered from Level #4, Area A. One (A-4-70) is a complete specimen which is nearly identical in size and shape to the side-notched Sandy Creek specimen (#1, plate 10, Wettlaufer 1955:105) from the Mortlach site. It exhibits a straight to slightly concave base and obtuse, irregular side-notches with a slightly asymmetrical blade. The second specimen, (A-1-54) is slightly larger, represented by the blade portion only. The latter specimen is also slightly irregular in outline and exhibits finer bifacial flaking, but this may be because it is manufactured from a better quality material. The point is broken just above the haft element and no basal portion or notches remain. It is difficult to determine whether or not this break was the result of a flaw during manufacture, or from impact. The metrics of both these specimens are recorded in Table 8.2, and they are both illustrated in Appendix IV by Specimen Number.

TABLE 8.1: Area A , Level #4 , Number of Lithic Tools and Debitage by Lithic Material

LITHIC MATERIAL / Tools	Swan River Chert		Knife River Flint		Obsidian		Montana Agate		Pebble Chert		Brown Chert		Black Chert		Limestone Chert		Quartzite	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Proj. Points	2	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bifaces	2	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
End-scrapers	-	-	1	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Side-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Drills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hammer-stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retouched Flakes	2	50.0	2	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utilized Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debitage																		
Cores	1	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prim. Red. Fl.	8	57.3	1	7.1	-	-	1	7.1	1	7.1	-	-	1	7.1	-	-	-	-
Second. Red. Fl.	44	77.1	6	10.5	-	-	2	3.5	1	1.8	-	-	1	1.8	-	-	-	-
TOTALS	59	71.1	10	12.1	0	0.0	3	3.6	2	2.4	0	0.0	2	2.4	0	0.0	0	0.0

TABLE 8.1: Area A, Level #4 , Number of Lithic Tools and Debitage by Lithic Material (Continued)

LITHIC MATERIAL / Tools	Altered Felsic Lava		Quartz		Clear Chalcedony		Brown Chalcedony		Grey Chalcedony		Basaltic		Porcelainite		Granite		Silicified Sediment		TOTAL	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Proj. Points	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2.4
Bifaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2.4
End-scrapers	-	-	-	-	-	-	1	50.0	-	-	-	-	-	-	-	-	-	-	2	2.4
Side-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Drills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Hammer-stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Retouched Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4.8
Utilized Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Debitage																				
Cores	-	-	-	-	-	-	1	50.0	-	-	-	-	-	-	-	-	-	-	2	2.4
Prim. Red. Fl.	-	-	1	7.1	-	-	1	7.1	-	-	-	-	-	-	-	-	-	-	14	16.9
Second. Red. Fl.			2	3.5	-	-	1	1.8	-	-	-	-	-	-	-	-	-	-	57	68.7
TOTALS	0	0.0	3	3.6	0	0.0	4	4.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	83	100.0

Table 8.2: Projectile Point Metric Attributes* SANDY CREEK COMPLEX

Specimen Number	AREA	Maximum Length (mm)	Maximum Width (mm)	Maximum Thickness (mm)	Base Width (mm)	Width @ Notches	Weight (g)
A-1-54	A	21.9+	13.2+	4.5+	n/a	n/a	1.6
A-4-70	A	26.6	15.1	4.1	14.3	11.6	1.6
7S-13W-72	B	24.0	17.8	5.5	n/a	15.8	2.6+
7S-14W-60	B	9.4+	19.4+	3.9+	19.4	15.5	0.7+

*(+) indicates a portion is missing enabling only partial measurements to be taken

Bifaces

Two Swan River chert bifaces were recovered from Level #4, Area A. The first specimen (A-2-62) appears to have been trapezoidal or triangular in shape, but an end portion is missing. All surfaces are completely bifacially worked on this smallish tool, but evidence of use is minimal. The presence of a large thick nodule close to one edge suggests that this tool was never completed and perhaps its actual use was minimal - if the tool was used at all. The second specimen (A-4-71) is an oval-shaped tool that may have been reworked from a fragment of a larger tool. There is a great deal of unifacial work on the dorsal side, but only one lateral edge exhibits minimum use-wear. This suggests that this tool was discarded after a short time. The metric attributes of these two specimens are recorded in Table 8.3.

Endscrapers

Two endscrapers were recovered from Level #4, Area A. One (A-6-61) is made of a red-brown chalcedony. This endscraper exhibits one working edge on the distal end. It is a short, thick, slightly irregular rhombic-shaped item with a great deal of use-wear evident on the working edge. In overall appearance, this specimen resembles the "domed" Sandy Creek endscraper (#3, Plate 10, Wettlaufer 1955:105) recovered from the Mortlach site. The second specimen (A-4-62) is made of Knifé River flint. This is a finely worked rectangular artifact with two working edges on the distal and

Table 8.3: Biface Metric Attributes* Sandy Creek Complex

Specimen Number	Cultural Level	Maximum Length (mm)	Maximum Width (mm)	Maximum Thickness (mm)	Working Edge Angles D.	V.
A-2-62	A	20.0+	18.8	7.2	15°	20°
A-4-71	A	25.7	16.1	4.8	61°	53°

* (+) indicates a portion is missing enabling only partial measurements to be taken

D - Dorsal

V - Ventral

proximal ends. It also appears to be slightly "domed", but not to the same extent as the chalcedony endscraper. This specimen shows a heavy degree of use-wear on both working edges. The metric attributes of these endscrapers are recorded in Table 8.4, and they are illustrated in Appendix IV by Specimen Number.

Marginally Retouched Flakes

Four marginally retouched flake tools were recovered from Level #4 in Area A. Two specimens (A-2-89 and A-5-45) were made from Swan River chert primary reduction flakes. Specimen A-2-89 exhibits unifacial retouch on the left lateral and distal dorsal margins. Specimen Number A-2-89 exhibits unifacial retouch on the distal ventral surface. Neither of these specimens shows any great degree of use-wear on the worked edges. The two remaining retouched flakes (A-2-74 and A-8-54) are made from Knife River flint. Specimen A-2-74 is a small secondary reduction flake with dorsal retouch on the distal right lateral margin. Use-wear is not evident on this artifact. The second specimen (A-8-54) is a large primary reduction flake exhibiting retouch on the distal left lateral ventral surface, as well as some utilization on the unmodified right lateral ventral surface. This specimen shows a fair amount of wear on its retouched and utilized working edges.

(2) **Lithic Debitage**

Cores

Table 8.4: Endscraper Metric Attributes* SANDY CREEK COMPLEX

Specimen Number	AREA	Maximum Length (mm)	Maximum Width (mm)	Maximum Thickness (mm)	Working Edge Angle
A-4-62	A	19.7	11.7	5.5	82°/83°
A-6-61	A	20.4	17.3	11.1	84°
8S-13W-55	B	26.7	23.8	5.3	85°
8S-13W-63	B	n/a	n/a	6.0+	63°
9S-14W-55	B	21.5+	n/a	10.9	66°

* (+) indicates that a portion is missing enabling only partial measurements to be taken

Two cores, one of Swan River chert and one of brown chalcedony, were recovered from Level #4, Area A. The distribution of the cores is illustrated in Figure 43, Appendix VI. The presence of a brown chalcedony core is an indication that some brown chalcedony was obtained locally, as is the Swan River chert.

Primary Reduction Flakes

Primary reduction flakes make up 16.9% of the total lithic assemblage of this Sandy Creek occupation. The most common material type is the locally available Swan River chert, which makes up 57.3% of all primary reduction flakes. The distribution of primary reduction flakes, both by frequency and weight, is illustrated in Figures 44 and 45, Appendix VI, respectively.

Secondary Reduction Flakes

Secondary reduction flakes make up the largest lithic category in Level #4, Area A. These flakes make up 68.7% of the entire lithic assemblage in Level #4. Figures 8.4 and 8.5, Appendix VI, respectively, illustrate the distribution of secondary reduction flakes by number and weight in Level #4, Area A units. A fairly even distribution throughout all the units is demonstrated. This information correlates nicely with the data for primary reduction flakes in this level, suggesting that all stages of lithic tool manufacture were taking place in the immediate vicinity.

(3) **Fire-Cracked Rock**

There were 23 pieces of granitic fire-cracked rock (Figure 48, Appendix VI), weighing 155.5 g recovered from Level #4, Area A.

Area B

There are a total of 333 lithic pieces recovered from Level #6, Area B. Nine of these are lithic tools and 324 are lithic debitage. There was also one ochre pebble recovered. The breakdown of lithic tools and debitage by materials for this level is illustrated in Table 8.5. The lithic tool locations are plotted on Figure 49, Appendix VI.

(1) **Lithic Tools**

No bifaces, sidescrapers, spokeshaves, hammerstones, grinding stones, or unmodified utilized flakes were recovered from this level.

Projectile Points

Two projectile points were recovered from Level #6, Area B. One (7S14W-60) is a basal portion made from brown chalcedony. The base is fairly straight and does not appear to be ground. Two irregular, obtuse side-notches beginning quite close to the base are evident, but the break occurs midway between the notches in the haft element. The second specimen (7S13W-72) is an irregular-shaped Swan River chert point that is complete except for a portion of the base on the left side. The base appears to have been straight or slightly concave. The remaining notch is quite obtuse, beginning very near the basal corner. The blade is short,

TABLE 8.5: Area B , Level #6 , Number of Lithic Tools and Debitage by Lithic Material

LITHIC MATERIAL / Tools	Swan River Chert		Knife River Flint		Obsidian		Montana Agate		Pebble Chert		Brown Chert		Black Chert		Limestone Chert		Quartzite	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Proj. Points	1	50.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bifaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
End-scrapers	1	33.3	1	33.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Side-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Drills	2	66.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hammer-stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retouched Flakes	-	-	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utilized Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debitage																		
Cores	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prim. Red. Fl.	20	43.4	8	17.4	-	-	4	8.7	2	4.4	-	-	1	2.2	3	6.5	-	-
Second. Red. Fl.	158	56.8	47	16.9	2	0.7	3	1.1	3	1.1	-	-	2	0.7	-	-	1	0.4
TOTALS	182	54.7	57	17.1	2	0.6	7	2.1	5	1.5	0	0.0	3	0.9	3	0.9	1	0.3

TABLE 8.5: Area B , Level #6 , Number of Lithic Tools and Debitage by Lithic Material (Continued)

LITHIC MATERIAL / Tools	Altered Felsic Lava		Quartz		Clear Chalcedony		Brown Chalcedony		Grey Chalcedony		Basaltic		Porcelainite		Granite		Silicified Sediment		TOTAL	
	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Proj. Points	-	-	-	-	-	-	1	50.0	-	-	-	-	-	-	-	-	-	-	2	0.6
Bifaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
End-scrapers	-	-	-	-	-	-	1	33.3	-	-	-	-	-	-	-	-	-	-	3	0.9
Side-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Drills	-	-	-	-	-	-	1	33.3	-	-	-	-	-	-	-	-	-	-	3	0.9
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Hammer-stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Retouched Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.3
Utilized Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Debitage																				
Cores	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Prim. Red. Fl.	-	-	-	-	-	-	8	17.4	-	-	-	-	-	-	-	-	-	-	46	13.8
Second. Red. Fl.	-	-	5	1.8	-	-	56	20.1	-	-	1	0.4	-	-	-	-	-	-	278	83.5
TOTALS	0	0.0	5	1.5	0	0.0	67	20.1	0	0.0	1	0.3	0	0.0	0	0.0	0	0.0	333	100.0

stubby and irregular in outline. Both specimens are illustrated in Appendix IV by Specimen Number and their metric attributes are recorded in Table 8.2.

Endscrapers

Three endscrapers were recovered from Level #6, Area B. The only complete specimen (8S13W-55) is an irregular-shaped Swan River chert endscraper. The working edge on the distal margin shows some sign of use-wear, and the proximal end of this endscraper appears to have been marginally thinned-presumably to facilitate hafting. One of the broken specimens (9S14W-55) is made from Knife River flint. The working edge, which is split by a break running perpendicular through the artifact, shows a great deal of use-wear. Apparently, this endscraper broke during use and was discarded. The same conditions seem to apply to the other incomplete specimen (8S13W-63), except that the break runs diagonally to the working edge. This endscraper is made from brown chalcedony and does not appear to have been extensively used before being broken. The metric attributes of these endscrapers are recorded in Table 8.4, and they are illustrated in Appendix IV by Specimen Number.

Drills

Three drills were recovered from Level #6, Area B. Two (8S13W-93 and 9S13W-82) are made from Knife River flint and the remaining drill (9S14W-45) is made from brown chalcedony. The brown chalcedony specimen is made from a primary

reduction flake which has a long, spur-like projection emanating out from one end. The resultant drill is illustrated in Appendix IV by Specimen Number. Specimen Number 9S13W-82 attests to the knapping skill of its maker, as well as to the quality of the Knife River flint. This drill is broken, presumably in mid-section. In cross-section, it is diamond-shaped and worked on four sides to create a long and slender drill point. Specimen Number 8S13W-93, also made from Knife River flint, likely began as a projectile point and was modified into a drill - perhaps while still hafted. This hafted-drill bears a great resemblance to the previously-recorded Sandy Creek points, having a slightly concave base and large, irregular obtuse side-notches which begin very near the corners. Several slight flake scars ending in hinge fractures appear to end at regular intervals above the shoulder. It is the regular arresting of these flake scars that suggests that this tool was still hafted when it was reworked into a drill (R.E. Morlan 1986, personal communication). These drills are illustrated in Appendix IV by Specimen Number.

Marginally Retouched Flakes

One marginally retouched Knife River flint flake was recovered from Level #6, Area B. This flake exhibits retouch on the left lateral margin but bears little evidence of use-wear.

(2) **Lithic Debitage**

Primary Reduction Flakes

The relative amounts of primary reduction flakes by material are recorded in Table 8.5. The distribution of these flakes by number and weight, respectively, is illustrated in Figures 50 and 51, Appendix VI, respectively. While Swan River chert is still the most common material in the Sandy Creek occupation, other more exotic materials, such as Knife River flint and Montana Agate, form a higher percentage than in most cultural levels in Area B.

Secondary Reduction Flakes

In this category Swan River chert is again the most common material but exotic materials, such as obsidian, Knife River flint and Montana Agate, are also found. The distribution by number and weight of the secondary reduction flakes in Level #6, Area B is recorded on Figures 52 and 52, Appendix VI, respectively.

(3) **Fire-Cracked Rock**

There were 154 pieces of granitic fire-cracked rock (Figure 54, Appendix VI) weighing 10,800.6 g recovered from Level #6, Area B.

8.2.3 Organic Assemblage

Area A

Three bone tools were recovered from Level #4, Area A. These are illustrated in Appendix V by Specimen Number. There were no fleshers, needles, beads or fish spears

recovered from this level.

Awls/Punches

Specimen Number A-6-27 is a small awl or punch crafted from a medium-sized mammal rib. It is rather small (length: 32 mm), but is finely worked to a point at one end although unfinished at the proximal end.

Specimen Number A-6-40 is the very proximal (handle) end of a large awl or punch. It is well-carved and deeply notched near the end. A slight polish is evident in the notch where a cord may have been tied.

Miscellaneous

Specimen Number A-3-2 is a well worked artifact made from a large mammal rib. This tool is roughly crescent-shaped and extremely flat. Both ends taper to a point, although one end is much more pointed than the other. This artifact is 61 mm in length may have been a knife.

Area B

Two bone artifacts were recovered from Level #6, Area B. No fleshers, beads or awls/punches were recovered from this level.

Needles

Specimen Number 8S14W-48, most likely a netting needle, was carefully crafted from a long bone of a small- to medium-sized mammal. It was worked to a point and then, using the natural cavity, a hole was carved into the needle 10 mm below the tip to join with the natural cavity. This bone tool

exhibits a high degree of smoothing and polish. This may represent the only tangible evidence of net-making at the Lebret site other than the impressions on the ceramic exteriors which, however, are Avonlea.

Fish Spears

Specimen Number 8S13W-27, a fish spear tip, was crafted from a large- to medium-sized mammal long bone. It is broken and is 44 mm long, with a maximum width of 10 mm. The exterior is quite rough and there is no sign of polish or smoothing. There are no barbs on this tool and it is too small a specimen to determine whether or not they were once present.

8.2.4 Sandy Creek Artifact Assemblage: Summary

Overall, the lithic artifacts from the Sandy Creek levels at Lebret are similar to those found at the Mortlach site (Wettlaufer 1955). While very little is known about Sandy Creek assemblages, the projectile points are consistently irregular in outline with obtuse side-notches located very near the base. The endscrapers are short and stubby, rhombic-shaped with a tendency to be domed. There also seems to be a preference for more exotic materials such as Montana Agate, although local materials dominate. The organic assemblage provides a wide range of bone tools including awls, needles and fish spears.

The Sandy Creek assemblage is similar to the Late Plains Indian period assemblages in that the endscrapers are heavily

worn, and the breakage on several tools suggest they were discarded during manufacture. It is likely that activities such as stone tool production and hide-working were commonly undertaken during this occupation.

8.3 Unidentified Middle Plains Indian Period Complex

8.3.1 Introduction

The Unidentified Middle Plains Indian Period Complex is represented in Level #7, Area B (excavation units 7S 13W, 7S 14W, 8S 13W, 8S 14W, 9S 13W, and 9S 14W, Figure 4.2). There were no organic artifacts or features associated with this level.

8.3.2 Lithic Assemblage

There were a total of 183 lithic pieces recovered from Level #7, Area B. One of these, a drill, is this level's only lithic tool, 182 pieces are debitage. The breakdown of lithic tools and debitage by lithic material for this level is illustrated in Table 8.6. The locations of the lithic tools are plotted in Figure 55, Appendix VI.

(1) **Lithic Tools**

There were no projectile points, bifaces, endscrapers, sidescrapers, spokeshaves, hammerstones, grinding stones, marginally retouched flakes or unmodified utilized flakes recovered from this level.

Drills

A Swan River chert drill was recovered from Level #7, Area B. The broken drill was manufactured from a secondary

TABLE 8.6: Area B , Level #7 , Number of Lithic Tools and Debitage by Lithic Material

LITHIC MATERIAL / Tools	Swan River Chert f	%	Knife River Flint f	%	Obsidian f	%	Montana Agate f	%	Pebble Chert f	%	Brown Chert f	%	Black Chert f	%	Limestone Chert f	%	Quartzite f	%
Proj. Points	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bifaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
End-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Side-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Drills	1	100.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hammer-stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Retouched Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Utilized Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Debitage																		
Cores	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prim. Red. Fl.	26	57.9	-	-	-	-	-	-	-	10	22.2	-	-	2	4.4	4	8.9	-	-
Second. Red. Fl.	66	48.2	9	6.6	-	-	6	4.4	5	3.7	-	-	-	-	1	0.7	1	0.7
TOTALS	93	50.3	9	4.9	0	0.0	6	3.3	15	8.2	0	0.0	2	1.1	5	2.7	1	0.5

TABLE 8.6: Area B , Level #7 , Number of Lithic Tools and Debitage by Lithic Material (Continued)

LITHIC MATERIAL / Tools	Altered Felsic Lava f	%	Quartz f	%	Clear Chalcedony f	%	Brown Chalcedony f	%	Grey Chalcedony f	%	Basaltic f	%	Porcelainite f	%	Granite f	%	Silicified Sediment f	%	TOTAL f	%
Proj. Points	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Bifaces	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
End-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Side-scrapers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Drills	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.5
Spoke-shaves	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Hammer-stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Grinding Stones	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Retouched Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Utilized Flakes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Debitage																				
Cores	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0.0
Prim. Red. Fl.	-	-	-	-	1	2.2	2	4.4	-	-	-	-	-	-	-	-	-	-	45	24.6
Second. Red. Fl.	-	-	-	-	3	2.2	44	32.1	-	-	1	0.7	1	0.7	-	-	-	-	137	74.9
TOTALS	0	0.0	0	0.0	4	2.2	46	25.1	0	0.0	1	0.6	1	0.6	0	0.0	0	0.0	183	100.0

reduction flake and bifacially worked on four sides creating a diamond-shaped cross-section. It is not clear whether this drill broke during use.

(2) **Lithic Debitage**

Primary Reduction Flakes

Forty-five primary reduction flakes, making up 24.6% of the entire lithic assemblage, were recovered from Level #7, Area B. As always, Swan River chert is the dominant lithic material type at 57.9% of the total. The distribution by number and weight of these flakes is illustrated in Figures 56 and 57, Appendix VI, respectively.

Secondary Reduction Flakes

The secondary reduction flakes make up 74.9% of the total lithic assemblage, with 48.2% of these flakes being Swan River chert. The other frequencies and percentages are recorded in Table 8.6. The distribution of these flakes by number and weight is illustrated in Figures 58 and 59, Appendix VI, respectively.

(3) **Fire-Cracked Rock**

Thirty pieces of granitic fire-cracked rock (Figure 60, Appendix VI) weighing 1623.4 g were recovered from Level #7, Area B.

8.3.3 Unidentified Middle Plains Indian Period Complex Artifact Assemblage: Summary

Little can be said about such a small artifact assemblage. Clearly, stone tool production using local materials was undertaken. The drill suggests that some work,

perhaps in bone, wood, or hide, was also being done. While the sample is quite small, indications are that campsite activities similar to those witnessed in later levels was ongoing during this occupation.

8.4 Middle Plains Indian Period Artifact Assemblage: Summary

The artifact assemblage from these two occupations indicate that activities similar to those described for the Late Plains Indian Period were also taking place during this time. As well as subsistence activities that involved fishing, stone tool production and hide processing were also being undertaken. Although the cultural complexes are different, and the cultural assemblage for this period lacks some of the items seen in later assemblages, the overall impression derived from the artifacts recovered is one of preparation and repair of the material culture. Again, this suggests occupation of the site for several weeks or perhaps several months during which time materials could be gathered and processed into the cultural system of these Middle Plains Indian Period peoples before they continued on to other areas and different activities.

9.0 FAUNAL ASSEMBLAGE

9.1 Introduction

Faunal remains were recovered from all excavated areas of the Lebret site. A total of 29,682 bone fragments weighing 23,293.8 g, as well as 742 freshwater clam shell fragments weighing 215.9 g were recovered. The majority of the faunal assemblage in all cultural levels consists of small, unidentifiable, comminuted fragments, although a wide range of elements representing a diverse number of taxa were identified. A list of species is provided for every cultural occupation.

Where possible, faunal remains were identified to the element, species represented and side. An estimation of minimum numbers was carried out on the mammalian and fish remains. Difficulties were encountered in the identification of avian remains due to an incomplete comparative collection. The distribution by number and weight of burned and unburned mammal, fish, bird and clam has been plotted by quarter-meter squares for each cultural level to indicate the distribution of these remains in each area of the site (Appendix VII). The results of these analyses are presented and discussed in the following pages according to the cultural level and area from which the sample was recovered.

9.2 Historic and Fall River Plains Side-Notched Faunal Assemblage

Both historic and prehistoric artifacts were recovered from the upper Levels #1 and #2 from Area S. Level #2 in

Area S was arbitrarily divided into Level #1, which encompasses all historic artifacts and Level #2 which includes all the obvious prehistoric artifacts. This was easily done for the non-faunal artifacts, but impossible for the faunal materials. It is felt that this level represents more of the prehistoric lifestyle than the historic, and very few historic relative to prehistoric artifacts were actually recovered from this area.

Faunal Assemblage, Level #2, Area S

The faunal remains for this level are designated as a single assemblage, even though it is likely that a number of species may have been procured during the historic period. There were 1648 bone fragments and 23 freshwater clam shell fragments recovered for a total of 1671 pieces from this level.

Mammal

A total of 651 mammal bone fragments weighing 776.5 g were recovered, making up 39.0% by number and 85.2% by weight of the faunal assemblage in Level #2, Area S. The distribution by number and weight of both burned and unburned remains are illustrated on Figures 1, 2 and 3, 4, Appendix VII, respectively. The identified species and the minimum number of individuals represented (MNI) are listed as follows:

GENUS/SPECIES	COMMON NAME	MNI
Bison bison	bison	1
Cervus elaphus	elk	1
Castor canadensis	beaver	1
Ondatra zibithecus	muskrat	1
Lepus americanus	snowshoe hare	1
Lepus sp.	hare/rabbit	1
Canis sp.	dog/coyote	1

As well as the above species, there was an additional single, unidentifiable large ungulate, either bison or elk, one small mammal and a number of small rodents. The latter, consisting of gophers, ground squirrels and voles, were likely intrusive. All the mammal remains were very fragmentary, suggesting a high degree of processing.

Fish

A total of 903 fish bone fragments were recovered weighing 105.2 g. These remains make up 54.0% of the faunal assemblage by number and 11.5% by weight. The distribution by number and weight of unburned fish remains in Level #2, Area S is illustrated on Figures 5 and 6, Appendix VII, respectively. No burned fish remains were recovered. The identified species and the minimum number of individuals (MNI) represented are listed as follows:

GENUS/SPECIES	COMMON NAME	MNI
Esox lucius	northern pike*	5
Stizostedion vitreum	walleye*	3
Castostomus commersoni	white sucker*	2
Moxostoma macrolepidotum	shorthead redhorse*	1
Perca flavescens	yellow perch*	1
Coregonus clupeaformis	lake whitefish**	1

*indicates spring spawners; **indicates fall spawners

The majority of the fish remains recovered were from spring spawners but, as mentioned previously, the only fall spawner, the lake whitefish, may also be taken occasionally in the spring. Curiously, the whitefish is represented only by scales in this level indicating, perhaps, that it is a rare catch.

Bird

There are a total of 94 bird fragments represented in Level #2, Area S, weighing 26.1 g. The bird remains make up 5.6% of the faunal assemblage by number and 2.9% by weight. As suggested by the number and weight totals, the remains are very small and only one, a distal humerus fragment, may represent a larger bird, likely a duck. The distribution by number and weight of burned and unburned bird remains throughout this level is illustrated in Figures 7, 8 and 9, 10, Appendix VII, respectively.

Freshwater Clam Shell

Twenty-three freshwater clam shell fragments, or 1.4% of the faunal assemblage of Level #2, Area S by number and 0.4% by weight, were recovered. It is unlikely that freshwater clams made up part of the diet of prehistoric peoples, but were likely used for ornaments or for tools such as spoons. The distribution density by number and weight of burned and unburned freshwater clam shell is plotted on Figures 11 and 12, Appendix VII, respectively.

Level #2, Area S, Faunal Assemblage Summary

Fish is clearly a major component of the prehistoric and, perhaps, historic diet of the Level #2 occupants in Area S. Considering that Level #2 consists of just 6.5 excavated meters, there is a large number of fish represented in comparison to the number of mammals. The mammal remains indicate that a wide variety of species were being exploited during this period suggesting opportunistic hunting only. The faunal remains imply an occupation during open water, and this is most likely a spring occupation.

9.3 Late Prairie or Plains Side-Notched Complex Faunal Assemblage

The Late Prairie or Plains Side-Notched faunal assemblage consists of those remains taken from the disturbed plough zone layer of Area A and Area B, as well as those from Level #3 in Area S. Due to the disturbed nature of the cultivated areas, faunal analysis in Areas A and B is limited

to the identification of species. The procedures for analysis of Level #3, Area S remains are the same as those discussed previously for Level #2, Area S.

Faunal Assemblage from the Cultivated Layers in Area A and Area B

The faunal remains from the plough zone contain a mixture of historic (presumably Metis) and Late Prairie or Plains Side-Notched materials. Due to the disturbance it is difficult to assess the relative cultural importance of these species. They are as follows:

Mammals

GENUS/SPECIES	COMMON NAME
Bison bison	bison
Equus caballus	domestic horse
Cervus elaphus	elk
Antilocapra americana	pronghorn antelope
Canis lupus	wolf
Canis latrans or familaris	coyote or dog
Odocoileus sp.	deer
Castor canadensis	beaver
Taxidea taxus	badger
Mustela frenata	long-tailed weasel
Lontra canadensis	river otter
Erethizon dorsatum	porcupine
Odatra zibithecus	muskrat
Vulpes vulpes	fox

Mephitis mephitis	striped skunk
Lepus americanus	snowshoe hare
Lepus townsendii	white-tailed jackrabbit
Thomomys talpoides	northern pocket gopher

Birds

Tympanuchus cupido	prairie chicken
Anas platyrhynchos	mallard duck
Aytha valisineria	canvasback duck
Aytha sp. or Anas sp.	duck
Order Passeriformes	songbirds

Fish

Stizostedion vitreum	walleye
Esox lucius	northern pike
Castostomus commersoni	white sucker
Coregonus clupeaformis	whitefish
Perca flavescens	yellow perch
Moxostoma macrolepidotum	shorthead redhorse

Late Prairie or Plains Side-Notched Complex, Level #3, Area S, Faunal Assemblage

The faunal assemblage of Level #3, Area S consists of 5389 bone fragments and 70 freshwater clam shell fragments.

Mammal

A total of 2239 mammal bone fragments weighing 2715.8 g were recovered. These make up 41.0% by number and 87.6% by

weight of the total faunal assemblage of Level #3, Area S. The distribution by number and weight of burned and unburned mammal bone from this level is illustrated in Figures 13, 14 and 15, 16, Appendix VII, respectively. The identified species and the minimum number of individuals (MNI) represented are noted below:

GENUS/SPECIES	COMMON NAME	MNI
Lepus americanus	snowshoe hare	2
Bison bison	bison	1
Cervus elaphus	elk	1
Odocoileus sp.	deer	1
Canis lupus	wolf	1
Canis sp.	dog/coyote	1
Castor canadensis	beaver	1
Taxidea taxus	badger	1
Lontra canadensis	river otter	1

As well as these identified species, a number of large mammal remains of either bison or elk were also recovered along with several unidentified small mammals and rodents. The latter are regarded as intrusive into this cultural level. Most of the remains are quite fragmentary, indicating a high degree of processing.

Fish

A total of 3103 fish bone fragments were recovered

weighing 288.2 g. These remains make up 56.8% of the faunal assemblage in Level #3, Area S by number and 9.3% by weight. The distribution by number and weight of burned and unburned fish remains is illustrated in Figures 17, 18 and 19, 20, Appendix VII, respectively. The identified species and minimum number of individuals (MNI) represented are listed below:

GENUS/SPECIES	COMMON NAME	MNI
Esox lucius	northern pike*	11
Stizostedion vitreum	walleye*	6
Castostomus commersoni	white sucker*	2
Moxostoma macrolepidotum	shorthead redhorse*	2
Perca flavescens	yellow perch*	1
Coregonus clupeaformis	lake whitefish**	1
Lota lota	burbot***	1

*indicates spring spawner; **indicates fall spawner
***indicates winter spawner - possible identification only

The majority of fish species represented here are spring spawners suggesting, as with Level #2, Area S, a spring occupation for this level. The single fall spawner, the lake whitefish, is represented by a single skeletal element and some scales evidence, perhaps, that their occurrence is quite rare. The possible presence of burbot in the collection is rather puzzling, but it too is represented by a very few elements. Its occurrence is minimal at other areas and

levels at the Lebret site suggesting its use or capture was generally rare.

Bird

A total of 47 bone fragments are assigned to this category. These have a total weight of 10.8 g and make up only 0.9% of the total faunal assemblage of Level #3, Area S by number and 0.3% by weight. No identifiable species were recovered as these bones were very small and fragmentary. The distribution by number and weight of unburned bird bone is illustrated on Figures 21 and 22, Appendix VII, respectively. No burned bird bone was recovered.

Clam

A total of 70 freshwater clam shell fragments, weighing a total of 86.6 g, were recovered from Level #3, Area S. The clam shell makes up only 1.3% of the total faunal assemblage by number and 2.8% by weight, but indicates that this occupation took place during a period of open water. The distribution of clam shell fragments by number and weight is illustrated on Figures 23 and 24, Appendix VII, respectively.

Level #2, Areas A and B; Level #3, Area S, Faunal Assemblage Summary

The faunal assemblage in Level #2, Areas A and B, and in Level #3, Area S, demonstrates the wide range of fauna exploited by the Late Plains or Prairie Side-Notched Complex peoples at the Lebret site. It is likely that this occupation took place during a period of open water - very probably in early spring, coinciding with the spawning peaks

of several species of fish, most notably northern pike and walleye, both of which spawn in late April and early May.

9.4 Late Prairie Side-Notched Complex, Level #2A, Area B Faunal Assemblage

A total of 991 bone fragments and 25 freshwater clam shell fragments, for a total of 1016 pieces weighing 815.5 g, make up the faunal assemblage for Level #2A, Area B.

Mammals

A total of 705 mammal bone fragments weighing 793.4 g were recovered. The mammal remains make up 69.4% of the faunal assemblage by number and 97.3% by weight in this level. The distribution of burned and unburned mammal bone by number and weight is illustrated on Figures 25, 26 and 27, 28, Appendix VII, respectively. The identified species and minimum number of individuals (MNI) present are listed below:

GENUS/SPECIES	COMMON NAME	MNI
Bison bison	bison	1
Lepus americanus	snowshoe hare	1
Lepus sp.	hare/rabbit	1
Canis sp.	dog/coyote	1

In addition to the identified species, one large mammal, possibly deer, elk or bison, and one small mammal, possibly otter, squirrel or muskrat were represented.

As previously noted, a great variety of species was exploited implying a diverse subsistence strategy which

involved nearly all the environments near the Lebret site.

Fish

A total of 280 fish bone fragments weighing 17.5 g were recovered from Level #2A, Area B. The fish remains make up 27.6% of the faunal assemblage by number and 2.2% of the total bone by weight. The distribution of burned and unburned fish bone by number and weight is illustrated on Figures 29, 30 and 31, 32, Appendix VII, respectively. The identified species and the minimum number of individuals (MNI) present are listed below:

GENUS/SPECIES	COMMON NAME	MNI
Stizostedion vitreum	walleye*	1
Esox lucius	northern pike*	1
Castostomus commersoni	white sucker*	1
Coregonus clupeaformis	lake whitefish**	1

*indicates spring spawner; **indicates fall spawner

The majority of fish recovered from Level #2A, Area B are, again, spring spawners. The lake whitefish remains a constant member of the species listed, but never occurs in large numbers. A spring occupation of this level is likely, however, a fall or a spring and fall occupation is not out of the question.

Bird

Six small, unidentifiable, bird bone fragments weighing

1.0 g were recovered from Level #2A. They make up only 0.6% of the faunal assemblage by number and 0.1% by weight. The distribution of unburned bird bone by number and weight is documented in Figures 33 and 34, Appendix VII, respectively. No burned bird remains were found. Very little may be said about this portion of the assemblage, but it would seem that birds are not being exploited as much by the occupants of Level #2A as by those who occupied other levels at the Lebret site.

Freshwater Clam Shell

A total of 25 clam shell fragments were recovered from Level #2A, Area B. The clam shell weighs 3.6 g and makes up 2.4% of the faunal assemblage in this level by number and 0.4% by weight. The distribution density by number and weight of burned and unburned freshwater clam shell is illustrated in Figures 35 and 36, Appendix VII, respectively. Clam does indicate an open water occupation, but this resource is obviously not being heavily exploited.

Level #2A, Area B, Faunal Assemblage Summary

Level #2A indicates that a diverse subsistence strategy involving the exploitation of large and small mammals, some fish and a few birds and clam was practiced. The faunal remains indicate that this was an open water occupation most likely occurring during the spring occupation.

9.5 Avonlea Complex (Level #3, Area A and B; Level #4, Area S) Faunal Assemblage

Area A (Level #3)

A total of 4206 bone fragments and 41 freshwater clam shell fragments for a total of 4247 pieces weighing 4797.9 g make up the faunal assemblage of Level #3, Area A.

Mammals

A total of 3195 mammal bone fragments weighing 4691.2 g were recovered from this level. The mammal remains make up 75.1% of the faunal assemblage by number and 97.7% by weight. The distribution of burned and unburned mammal bone by number and weight is illustrated in reference to the hearth feature (A-2-1) in Figures 37, 38 and 39, 40, Appendix VII, respectively. The identified species and the minimum number of individuals (MNI) are presented below:

GENUS/SPECIES	COMMON NAME	MNI
Lepus americanus	snowshoe hare	6
Lepus sp.	hare/rabbit	2
Bison bison	bison	1
Canis lupus	wolf	1
Vulpes vulpes	fox	1
Canis sp.	dog/coyote	1
Castor canadensis	beaver	1
Lontra canadensis	river otter	1
Homo sapiens	Human	1

This Avonlea occupation presents one of the most diverse subsistence strategies at the Lebret site. The majority of the mammalian remains represent bison and these are fragmentary and well processed. Snowshoe hare is the most numerous mammal with six individuals represented. The presence of beaver and otter suggests that the riverine areas were being exploited in addition to the terrestrial environments.

Two finds, one very unusual and the other slightly less so, concerns the human remains recovered from this level. The most unusual find was a human second phalange or finger digit that has its proximal end drilled laterally to create a pendant or bead-like object (Appendix V, Specimen Number A-8-20). This pendant may represent some special ceremonial item or a personal talisman. There is very little wear on the object, suggesting that it was not worn for a long period of time.

Two human teeth were also recovered. A single incomplete and markedly worn canine was recovered. This specimen consists mostly of a root portion with little of the crown remaining. Similarly, a burned maxillary molar tooth was recovered from the hearth feature in excavation Unit Two, southwest quadrant. No other human remains were found.

It is considered highly unlikely that this represents a burial or cremation area, given the day-to-day activities that are associated with this hearth feature although this

remains a possibility. These teeth and the human phalange remain enigmatic.

As well as the species identified, several small, unidentified small mammals and rodents are present. The latter are likely intrusive.

Fish

A total of 921 fish bone fragments weighing 75.8 g were recovered. The fish remains make up 21.7% of the faunal assemblage by number, or 1.6% of the bone by weight in this Avonlea level. The distribution of burned and unburned fish remains by number and weight is illustrated in reference to the hearth feature in Level #3 in Figures 41, 42 and 43, 44, Appendix VII, respectively. The identified species and the minimum number of individuals (MNI) present are listed below:

GENUS/SPECIES	COMMON NAME	MNI
Esox lucius	northern pike*	4
Castostomus commersoni	white sucker*	2
Stizostedion vitreum	walleye*	1
Perca flavescens	yellow perch*	1
Coregonus clupeaformis	lake whitefish**	1
Coregonus artedii	tullibee**	1

*indicates spring spawners; **indicates fall spawners

The fish remains indicate that both spring and fall spawners are being taken in this occupation. The spring spawners are in the majority and the indications from the

bird remains (see below) are that this is a spring occupation.

Bird

A total of 92 bone fragments are assigned to this category. These have a total weight of 22.3 g and make up 2.2% of the faunal assemblage in Level #3, Area A by number and 0.5% by weight. The bones were generally small and fragmentary, but several were identifiable. The distribution by number and weight of burned and unburned bird bone is illustrated in Figures 45, 46 and 47, 48, Appendix VII, respectively. The identified species and minimum number of individuals (MNI) represented are listed below:

GENUS/SPECIES	COMMON NAME	MNI
Anas platyrhyncos	mallard duck	1
Anas sp.	duck	1
Branta canadensis	Canada goose	1
Order Passeriformes	small song birds	2*

*one immature specimen recovered

This level is represented by both waterfowl and a variety of small song birds. These latter birds may have made up a small part of the diet, as no doubt the waterfowl did, however, they may have also been taken for their feathers for personal adornment. The recovery of the waterfowl places this occupation during a period of open

water and the recovery of an immature song bird of an unidentified species strongly suggests a spring/early summer occupation.

Clam

Forty-one freshwater clam shell fragments were recovered and make up only 1.0% of the total faunal assemblage of this level. The distribution of freshwater clam by number and weight is illustrated on Figures 49 and 50, Appendix VII, respectively. The clam also suggests an occupation period during open water.

Area B (Level #3)

There are 12,556 bone fragments and 111 freshwater clam shell fragments, for a total of 12,667 pieces weighing 9849.3 g that make up the faunal assemblage for Level #3, Area B.

Mammal

A total of 9570 mammal bone fragments weighing 9485.0 g were recovered. The mammal remains make up 75.5% of the faunal assemblage by number and 96.3% by weight in Level #3, Area B. The distribution of burned and unburned mammal bone by number and weight is illustrated in Figures 51, 52 and 53, 54, Appendix VII, respectively. The identified species and minimum number of individuals (MNI) present are presented as follows:

GENUS/SPECIES	COMMON NAME	MNI
Bison bison	bison	4*
Lepus sp.	hare/rabbit	2
Lepus americanus	snowshoe hare	1
Lepus towndsendii	white-tailed jack rabbit	1
Canis lupus	wolf	1
Canis sp.	dog or coyote	1
Possible species represented:		
Odocoileus sp.	deer	1
Cervus elaphus	elk	1
Vulpes vulpes	fox	1

*one immature individual

Bison are clearly the best represented species, but they make up only 30.0% of the identified species in this occupation. The bison bone, as well as the large and small mammal remains, were well processed and quite fragmentary. Large mammals clearly do not dominate the faunal assemblage, as 53.0% of the identified species are small mammals. It was not possible to age the immature bison, as the remains were too fragmentary for an accurate estimation of age and approximate season of procurement.

Fish

A total of 2910 fish bone fragments were recovered weighing 329.3 g. These remains make up 23.0% of the faunal

assemblage in Level #3, Area B by number and 3.3% by weight. The distribution by number and weight of burned and unburned fish remains is illustrated in Figures 55, 56 and 57, 58, Appendix VII, respectively. The identified species and minimum number of individuals (MNI) represented are listed as follows:

GENUS/SPECIES	COMMON NAME	MNI
Esox lucius	northern pike*	5
Stizostedion vitreum	walleye*	3
Castostomus commersoni	white sucker*	2
Perca flavescens	yellow perch*	1
Coregonus clupeaformis	lake whitefish**	1
Coregonus artedii	tullibee**	1
Lota lota	burbot***	1

*indicates spring spawner; **indicates fall spawner; ***indicates winter spawner

The majority of identified fish remains (78.5%) are spring spawners, while fall spawners make up 14.3% of the identified species and the remaining 7.2% are winter spawners. The lake whitefish and tullibee are mainly represented by scales with only a few skeletal elements present, suggesting that they are quite rare. The burbot, represented by only two elements, is also a rare occurrence. It is likely that a spring or fall fishing operation is represented here, but just how the burbot was procured is not

clear. There are few ethnographic accounts of burbot listed, although the Cree recognized this fish in their vocabulary. Quite likely when masses of fish were being trapped a few other species, as well as the expected spring spawners, would also be collected.

Bird

Only a very few, highly fragmented and unidentifiable bird remains (76 in total), were recovered from this occupation. They only weigh 15.0 g and make up 0.6% of the total faunal assemblage by number and 0.2% by weight. It is likely a few of the larger fragments may represent ducks or geese, but even this is not certain. The distribution by number and weight of burned and unburned bird remains is illustrated in Figures 59, 60 and 61, 62, Appendix VII, respectively.

Clam

A total of 111 freshwater clam shell fragments weighing 19.9 g were recovered. These suggest an open water occupation. Clam shell makes up 0.9% of the total faunal assemblage. The distribution of clam shell in Level #3, Area B by number and weight is illustrated in Figures 63 and 64, Appendix VII, respectively.

Area S, Level #4

There are a total of 899 bone fragments and 14 freshwater clam shell fragments for a total of 913 pieces weighing 454.1 g that make up the faunal assemblage for Level

#4, Area S.

Mammals

A total of 467 mammal bone fragments weighing 385.8 g were recovered. The mammal remains make up 51.2% of the faunal assemblage for Level #4, Area S by number and 84.9% by weight. The distribution of burned and unburned mammal bone by number and weight is illustrated in Figures 65, 66 and 67, 68, Appendix VII, respectively. The identified species and minimum number of individuals (MNI) represented are listed below:

GENUS/SPECIES	COMMON NAME	MNI
Bison bison	Bison	1
Canis sp.	dog/coyote	1
Lepus sp.	hare/rabbit	1

In addition to the identified species, there was a small unidentified mammal present that may have been an otter, squirrel or muskrat.

The mammal remains in Level #4 are also very fragmentary, but a wide variety of mammals are represented. Here, notably, small mammals make up the majority (75.0%) of the identified species in this admittedly small sample.

Fish

A total of 426 fish bone fragments were recovered weighing 45.1 g. These remains make up 46.7% of the faunal

assemblage in Level #4 by number and 10.1% by weight. The distribution by number and weight of unburned fish remains is illustrated in Figures 69 and 70, Appendix VII, respectively. No burned fish remains were recovered. The identified species and minimum number of individuals (MNI) represented are listed as follows:

GENUS/SPECIES	COMMON NAME	MNI
Esox lucius	northern pike*	3
Stizostedion vitreum	walleye*	2
Castostomus commersoni	white sucker*	1
Coregonus clupeaformis	lake whitefish**	1

*indicates spring spawner; **indicates fall spawner

The majority of fish species represented are spring spawners, as has been the case throughout the Avonlea occupation at the Lebret site, but the lake whitefish is represented here as well, although in the minority.

Bird

A single large bird, likely a duck or goose, is represented in the six bird bone fragments weighing 1.4 g. These make up only 0.6% of the faunal assemblage by number and 0.3% by weight. The distribution of unburned bird remains by number and weight is illustrated in Figures 71 and 72, Appendix VII, respectively.

Clam

There were a total of 14 pieces of freshwater clam shell recovered from Level #4 in Area S, weighing 21.85 g. The distribution of clam shell by number and weight is illustrated in Figures 73 and 74, Appendix VII, respectively. The clam shell indicates an open water period of occupation.

Avonlea Complex Faunal Assemblage Summary

The Avonlea faunal assemblage from Areas A, B and S indicates that a large variety of large and small mammals from various microhabitats were being exploited. Interestingly, fish remains, while not as abundant as in the Late Prairie or Plains Side-Notched levels, still make up 22% to 46% of the total faunal assemblage by number of pieces recovered. Bison are represented in the assemblage, but are not dominant in comparison to fish and other large and small mammals present. Bird remains are generally poorly represented, but this may be a problem of identification. Those that are identified are mainly waterfowl, with small song birds also present.

The faunal assemblage provides strong evidence of a spring occupation, especially with the presence of an immature song bird and the large number of spring spawning fish. There is a possibility that some fall or winter occupation of Avonlea peoples occurred at the Lebret site, but the evidence for this is less convincing.

9.6 Area B, Level #4(?) Faunal Assemblage

The faunal assemblage from Level #4(?), Area B is very sparse. There are no identifiable mammal, fish or bird species in this sample which consists of only 110 pieces weighing 60.7 g. These fragments are represented by 72 mammal bones, making up 65.5% of the assemblage; 32 fish bones which make up 29.1% of the assemblage; two bird bones, making up 1.8% of the faunal assemblage and four freshwater clam shell fragments making up 3.6% of the total faunal assemblage in Level #4(?), Area B.

When one compares the percentages of the various classes of faunal remains recovered, it is noteworthy that these are very close to those recovered from the previous occupations, particularly the Avonlea faunal assemblage. If this is not a cultural level, then, perhaps, one would not expect such closely-related percentage figures for the classes of faunal remains recovered. This, however, is the only evidence of a cultural occupation in Level #4, Area B.

9.7 Area B, Level #5 (Possible Besant Complex) Faunal Assemblage

A total of 265 bone fragments and 17 freshwater clam shell fragments recovered, for a total of 282 pieces weighing 179.6 g, make up the faunal assemblage in Level #5, Area B.

Mammal

A total of 197 mammal bone fragments weighing 168.0 g were recovered. The mammal remains make up 69.6% of the faunal assemblage by number and 93.5% by weight. The

distribution of burned and unburned mammal remains by number and weight is illustrated in Figures 75, 76 and 77, 78, Appendix VII, respectively. The identified species and minimum number of individuals (MNI) recovered are listed below:

GENUS/SPECIES	COMMON NAME	MNI
Bison bison	bison	1

The single bison is represented by only four identifiable skeletal elements and represents a highly processed individual. Likely this area was not an intensely occupied location.

Fish

A total of 67 unburned fish bone fragments were recovered weighing 7.5 g. These remains make up 23.8% of the faunal assemblage in Level #5, Area B by number and 4.1% by weight. The distribution by number and weight of unburned fish remains is illustrated in Figures 79 and 80, Appendix VII, respectively. No burned fish remains were recovered. The identified species and the minimum number of individuals (MNI) present are listed as follows:

GENUS/SPECIES	COMMON NAME	MNI
Esox lucius	northern pike*	1
Stizostedion vitreum	walleye*	1
Castostomus commersoni	white sucker*	1
Coregonus clupeaformis	lake whitefish**	1
Coregonus artedii	tullibee**	1

*indicates spring spawner; **indicates fall spawner

In this suspected Besant Complex occupation, as in the other cultural levels present at the Lebret site, spring spawners form the majority of the fish recovered. If this level is actually a Besant Complex, then it represents the first evidence of Besant peoples fishing on the Northern Plains and Parklands.

Bird

A single unburned bird bone fragment was recovered. It is unidentifiable as to species or size of bird and is illustrated by number and weight on Figures 81 and 82, Appendix VII, respectively.

Clam

A total of 17 freshwater clam shell fragments were recovered from Level #5. The distribution by number and weight of clam shell is illustrated on Figures 83 and 84, Appendix VII, respectively.

Level #5, Area B Faunal Assemblage Summary

Very little may be said on the basis of this small sample of faunal remains. However, as small as the sample is, the species identified are very consistent with the previous cultural levels in terms of general percentage of remains by classes of fauna and species represented. This was likely a fairly sparse area of habitation in this level.

9.8 Sandy Creek Complex Faunal Assemblage, Level #4, Area A; Level #6, Area B

Area A, Level #4

A total of 766 bone fragments and 16 freshwater clam shell fragments, for a total of 782 pieces weighing 1168.3 g, make up the Sandy Creek faunal assemblage in Level #4, Area A.

Mammal

A total of 651 mammal bone fragments weighing 114.3 g were recovered. The mammal remains make up 83.2% of the faunal assemblage by number and 97.7% by weight. The distribution of burned and unburned mammal remains by number and weight is illustrated in Figures 85, 86, and 87, 88, Appendix VII, respectively. The identified species and minimum number of individuals (MNI) represented are listed as follows:

GENUS/SPECIES	COMMON NAME	MNI
Bison bison	bison	1
Odocoileus sp.	deer	1
Lepus americanus	snowshoe hare	1
Lepus sp.	hare/rabbit	1
Cervus elaphus or immature bison	elk or (immature) bison	1

The Sandy Creek occupation has yielded a fairly wide variety of both large and small mammalian remains. In addition to those species listed above, an unidentified large ungulate is also present.

Fish

A total of 108 fish bone fragments were recovered weighing 16.64 g. These remains make up 13.8% of the faunal assemblage in Level #4, Area A by number and 1.5% by weight. The distribution by number and weight of burned and unburned fish remains is illustrated in Figures 89, 90, and 91, 92, Appendix VII, respectively. The identified species and minimum number of individuals (MNI) represented are listed as follows:

GENUS/SPECIES	COMMON NAME	MNI
Esox lucius	northern pike*	2
Stizostedion vitreum	walleye*	1
Perca flavescens	yellow perch*	1
Castostomus commersoni	white sucker*	1
Coregonus clupeaformis	lake whitefish**	1

*indicates spring spawner; **indicates fall spawner

Although the fish remains are not as abundant by number in relation to the mammal species represented in Level #4, Area A, a good number of species is represented. The majority of these are spring spawners, indicative of a spring occupation.

Bird

Seven unidentifiable, burned bird bone fragments making up 0.9% of the faunal assemblage by number and 0.6% by weight were recovered from Level #4, Area A. The distribution of burned bird remains is illustrated in Figure 93 and 94, Appendix VII, respectively.

Clam

Sixteen pieces of freshwater clam shell were recovered from Level #4, Area A. The distribution of clam is illustrated in Figures 95 and 96, Appendix VII, respectively. Clam makes up 2.1% of the faunal assemblage and indicates an open water occupation.

Area B, Level #6

There are 2036 bone fragments and 240 clam shell fragments for a total of 2276 pieces weighing 1053.1 g that make up the Sandy Creek faunal assemblage in Level #6, Area B.

Mammal

A total of 1182 mammal bone fragments weighing 920.6 g were recovered. The mammal remains make up 51.9% of the faunal assemblage by number and 87.5% by weight. The distribution of burned and unburned mammal remains by number and by weight is illustrated in Figures 97, 98, and 99, 100, Appendix VII, respectively. The identified species and minimum numbers of individuals (MNI) represented are listed below:

GENUS/SPECIES	COMMON NAME	MNI
Lepus americanus	snowshoe hare	2
Bison bison	bison	1
Castor canadensis	beaver*	1
Lepus sp.	rabbit/hare	1
Canis sp.	dog/coyote	1
Mustelid sp.	weasel	1

*indicates immature individual

The majority of the mammals represented are small mammals. Bison is also present, but is not dominant. The

immature beaver is indicative of a spring occupation, since beaver have their young in early spring and this individual was obviously procured some months after this time.

Fish

A total of 824 fish bone fragments were recovered weighing 81.9 g. These remains make up 36.2% of the faunal assemblage in Level #6, Area B by number and 7.8% by weight. The distribution by number and weight of burned and unburned fish remains is illustrated in Figures 101, 102, and 103, 104, Appendix VII, respectively. The identified species and minimum number of individuals (MNI) present are listed below:

GENUS/SPECIES	COMMON NAME	MNI
Esox lucius	northern pike*	4
Stizostedion vitreum	walleye*	1
Castostomus commersoni	white sucker*	1
Coregonus clupeaformis	lake whitefish**	1

*indicates spring spawner; **indicates fall spawner

The fish remains in this area are more abundant than in Area A, but fewer species are represented. Based on the majority of spring spawners present, it is conceivable that this is a spring occupation

Bird

A total of 30 unidentifiable bird remains making up 1.3% of the faunal assemblage by number were recovered. Several of these may represent large birds, most likely waterfowl.

The distribution by number and weight is illustrated in Figures 105, 106, and 107, 108, Appendix VII, respectively.

Clam

A total of 240 freshwater clam shell fragments weighing 42.8 g were recovered. Clam makes up 10.5% of the faunal assemblage. The distribution by number and weight of clam shell is illustrated on Figures 109 and 110, Appendix VII, respectively.

Sandy Creek Complex Faunal Assemblage Summary

The faunal assemblages from the Sandy Creek occupations in Areas A and B indicate that a spring occupation is likely for both areas. These remains provide evidence of a generalized subsistence economy - a reliance on a great variety of small mammals, fish, and the occasional bison. While there is very little known to date about the Sandy Creek Complex in general, this is the first evidence of fishing related to this Complex.

9.9 Unidentified Complex (Area B, Level #7), Faunal Assemblage

A total of 850 bone fragments and 197 clam shell fragments, for a total of 1047 pieces weighing 1126.5 g, make up the faunal assemblage in Level #7, Area B.

Mammal

A total of 620 mammal bone fragments weighing 973.2 g were recovered. The mammal remains make up 59.2% of the faunal assemblage by number and 86.4% by weight. The distribution of burned and unburned mammal remains by number

and weight is illustrated in Figures 111, 112, and 113, 114, Appendix VII, respectively. The identified species and minimum number of individuals (MNI) represented is listed below:

GENUS/SPECIES	COMMON NAME	MNI
Bison bison	bison	1
Canis lupus	wolf	1
Castor canadensis	beaver	1
Lepus americanus	snowshoe hare	1

In addition to the above, one unidentified large mammal and one unidentified small mammal were also recovered. This assemblage indicates that the generalized subsistence activity witnessed throughout the Lebret occupations began quite early in time.

Fish

A total of 226 fish bone fragments were recovered weighing 126.7 g. These remains make up 21.6% of the faunal assemblage in Level #7, Area B by number and 11.2% by weight. The distribution by number and weight of unburned fish remains is illustrated in Figures 115 and 116, Appendix VII, respectively. No burned fish remains were recovered. The identified species and minimum number of individuals (MNI) represented are listed as follows:

GENUS/SPECIES	COMMON NAME	MNI
Esox lucius	northern pike*	6
Stizostedon vitreum	walleye*	1
Perca flavescens	yellow perch*	1
Castostomus commersoni	white sucker*	1
Coregonus clupeaformis	lake whitefish**	1

*indicates spring spawner; **indicates fall spawner

The fish species represent primarily spring spawners and this is likely a spring occupation. The species are consistent with those represented in later levels, suggesting that this pattern was established early on in the history of the Lebret site.

Bird

Only four pieces of bird bone were recovered from Level #7, Area B. Likely a single small bird of unknown species is represented. The distribution by number and weight of bird bone is illustrated on Figures 117 and 118, Appendix VII, respectively.

Clam

A large number of freshwater clam shell fragments (197 pieces) were recovered from Level #7, Area B. It is unclear why there is such a large percentage of clam (18.8%) represented and it is entirely possible that some of this clam shell relates to periods of flooding. The distribution of clam shell by number and weight is illustrated in Figures

119 and 120, Appendix VII, respectively.

Unidentified Complex (Area B, Level #7) Faunal Assemblage Summary

The faunal assemblage for the earliest cultural level recorded at the Lebret site demonstrates that a diversfied subsistence pattern centred on the procurement of fish, small mammals, the occasional large mammal and some, although relatively few, bird and clam. This pattern is repeated for over a 3000 year period at the Lebret site. The faunal assemblage from Level #7, Area B, does little to aid in the identification of the complex represented. McKean Complex sites have been known to include fish, and undoubtedly this resource will appear in Oxbow Complex sites in the future. Oxbow is in the immediate Lebret area (See Chapter 3), and presumably these peoples followed a subsistence strategy similar to that of the later occupants of the region.

9.10 Faunal Assemblage Summary

The faunal assemblage from the Lebret site occupations are important in several respects. All of the people present here were practicing a generalized subsistence economy. The exploitation of large, medium, and small terrestrial- and aquatically-oriented mammals indicates that all of the immediate environs and different habitats surrounding the site were being utilized. The Lebret site's inhabitants exploited nearly the full range of mammalian, avian and fish species available to them in the Parklands. This is a pattern that is repeated throughout the entire habitation

period at the site.

The season of occupation indicated is the spring and early summer, most likely from April to June. The mammalian and bird remains consistently include immature individuals and the majority of fish represented are consistently spring spawners.

Although a great many mammals and birds, as well as clam, are being taken, fish are continually exploited. It is likely that people repeatedly returned to the site to fish because this resource was predictable and large numbers of fish were always available in the spring and early summer during their spawning periods.

It is noteworthy that the people who occupied the Lebret site exploited the same species at the same location for a period of 3000 years. Such a pattern repeated so often and for such a length of time indicates that fishing was an integral part of the annual round of those Grasslands peoples who seasonally inhabited the Parklands.

10.0 THE IMPORTANCE OF FISHING AS AN ALTERNATIVE SUBSISTENCE PRACTICE AMONG NORTHERN PLAINS/PARKLAND GROUPS

10.1 Introduction

The Lebret site is situated between two natural freshwater lakes: Katepwa Lake and Mission Lake. Historically these lakes are referred to as the first and second "Fishing Lakes", respectively. Two other lakes to the east, Echo and Pasqua, make up the third and fourth Fishing Lakes. The Fishing Lakes are so called due to the abundance and quality of fish found in these lakes. There is no information as to when these lakes were named or by whom, but these four lakes were well known to fur traders as early as the late 1700's and likely it is an English interpretation of an Indian name.

Due to the Lebret site's close proximity to the Grasslands, it was expected that the excavated faunal remains would be a typical of the Northern Plains, with bison being the dominant species represented. As fieldwork continued, however, it became apparent that the Lebret site was unusual. Although typical Northern Plains archaeological complexes, were present, the site, and the activities that had taken place there, were atypical. Most unusual was the faunal assemblage, which included very few bison remains while fish remains occurred in abundance.

The expectations regarding the faunal assemblage were biased for two reasons: first, very few campsites comparable

to Lebret in the Saskatchewan Parklands have been excavated and published; second, the majority of sites excavated in southern Saskatchewan were either done at a time when faunal studies were in their infancy (e.g., McCorquodale 1960:87, in Wettlaufer and Mayer-Oakes 1960), or were predominantly bison kill sites (e.g., Kehoe 1973) where the faunal assemblage reflects this specialized activity.

In order to establish why an apparently unusual practice (that of fishing) was undertaken by the occupants of the Lebret site, a study of the ethnographic, historical, and archaeological literature on fishing practices among Northern Plains groups has been undertaken. It is hoped that through this study, a better understanding of alternative subsistence practices, such as fishing, may be reached. A second aim is also to determine the importance of fishing in relation to the seasonal occupation of the Parklands, and the associated Valley complexes by prehistoric and early historic groups.

The Parkland region contains many rivers and streams and several natural freshwater lakes that support fish populations. The warm water temperatures result in a rapid growth rate in terms of both individual size and populations. Rostlund (1952:67-71) has pointed out that the Northern Plains/Parkland area, traditionally not thought of as a good fishing region contains far more fish than the northern Boreal and sub-Arctic zones, and they grow larger and

multiply at a faster rate. It is only during the historic period that agricultural activities have tended to add silt to the Grassland and Parkland rivers creating a poorer habitat for fish. Also, the pressures of a larger human population exploiting these fisheries has tended to deplete waters which once supported large fish resources.

There are 16 native species of fish that are considered as potential food sources in the Northern Grasslands/Parkland areas. These are lake sturgeon, northern pike (jackfish), yellow perch, walleye (yellow pickeral), sauger, goldeye, lake whitefish, cisco (lake herring, tullibee), burbot, silver redhorse, shorthead redhorse, bigmouth buffalo, longnose sucker, white sucker, brown bullhead, and black bullhead.

The majority of these fish are spring spawners. During this season they congregate in large numbers moving out of the deeper lakes and rivers into shallow, tributary rivers, or stream mouths, most preferring to spawn in slow-moving, often turbid shallow water. A notable exception is the lake sturgeon which is a spring spawner but requires fast-moving, clear water to spawn. Lake sturgeon spawning behaviour includes regular up and down river spring migrations, sometimes over a great distance. The lake sturgeon is restricted in its natural range to the larger watercourses in the Northern Grasslands/Parklands: inhabiting the Red, Assiniboine, and North and South Saskatchewan Rivers. The

only species that do not spawn in the spring are the burbot, lake whitefish and the tullibee (cisco). The burbot is a lake dweller and spawns under the ice in the winter from late January through March. This behaviour would probably result in a minimal use of burbot by prehistoric peoples. The lake whitefish and the cisco or tullibee are fall spawners. They may migrate through rivers in large numbers during this season to preferred spawning grounds. Spawning for these two closely related species takes place during October and November. As a result, they could be a potential food source during these months. Interestingly, the lake whitefish is often present in shallow waters during the spring and early summer and may occasionally be taken along with the other spring spawners.

The spring spawners generally migrate to the spawning grounds early in the spring. Some, like the walleye, spawn early while the ice may be beginning to open where there is faster water. In the Northern Plains/Parklands, this spawn begins in early to mid-April. The northern pike also spawns between mid-April and late May. The other species mentioned usually spawn in May and June. When there are several closely related species present in the area, one species will spawn immediately before the other with the result that two spawning peaks occur quite close together, thus presenting a large concentration of fish over a relatively long period of time. It is quite normal for large numbers of fish to be

present at one time during spring spawning runs. Most notable are the large numbers of northern pike and the suckers which congregate in the thousands (Schultz 1955, in Scott and Crossman 1973:358) during spawning peaks. Fish in such large numbers, with a series of spawning peaks lasting from early April until mid-June, could potentially supply a large base camp throughout this period. As well, fall spawners such as lake whitefish and cisco could be collected during fall migrations and even may be taken along with the spring spawners during the spring and early summer (F.M. Atton 1986, personal communication). In addition to spawning runs during the spring and fall, several species travel in loose schools and, during the summer months, undertake daily movements to shallow areas to feed; therefore, fish would also be available, although in reduced numbers, in mid-summer. Fishing, therefore, would be most productive during the spring after break-up and in the fall prior to freeze-up, but would be possible at any time during periods of open water.

The Parklands region as an ecotone between the Grasslands and the Forests offered a wide variety of potentially exploitable floral and faunal resources for prehistoric and early historic populations. While the Parklands may be seen as a natural extension of the Forest zone into the Grasslands, it seems that the Indians of the Northern Plains occupied the Parklands as an extension of the

Grasslands. The cultural boundary between Forest dwellers and Grassland dwellers occurred not at the Grassland/Parkland edge, but rather at the Parkland/Forest edge (Meyer 1983:1). Indeed, almost without exception, the Parklands have been occupied throughout prehistory by Plains bison hunters (Meyer 1983:19). An archaeological study of fishing by these Northern Plains peoples should be conducted with reference to the historically recorded subsistence practices of Northern Plains and Parkland groups.

The interpretation of subsistence patterns and related practices in the Northern Great Plains region and the adjacent Parklands ecotone, particularly in southeastern Saskatchewan and southwestern Manitoba, has been hindered by the constraints of the anthropological culture-core/cultural-historical framework. As Ray (1972:103) suggests, this theoretical framework, centering on "typical" groups inhabiting and exploiting core culture areas, places serious constraints upon efforts to study peoples living in the adjacent peripheral areas. Taken in an historical perspective of anthropological study in general, this is not a case of neglect, but rather an historical artifact reflecting the way anthropological fieldwork and interpretion was undertaken in the first half of this century (a fact that Ray [1972:103] also acknowledges). It is also equally likely that neglect in studying the peripheral areas has also affected the anthropological/archaeological interpretation of

the subsistence patterns of "typical" core area groups. This is especially true regarding those aspects of Northern Plains subsistence patterns that are not centred specifically on bison hunting. The importance of fishing in prehistoric and early historic Northern Plains subsistence economies is the particular case in point. The wider ramifications of this in anthropological/archaeological interpretation will be discussed in Chapter 11.

10.2 Ethnographic and Historical Accounts of Native Fishing in the Northern Plains and Parklands

There are numerous accounts of Northern Plains subsistence practices in the ethnohistorical and ethnographic literature. The associated techniques and practices, along with the social, environmental and ecological factors involved in Northern Grasslands and Parkland bison hunting have been well documented. A survey of these accounts demonstrates that there is an overwhelming acceptance of the general assumption that in the Northern Plains subsistence was centred on the bison (for example, see Verbicky-Todd 1984; Arthur 1975; Frison 1978). While this assumption is undoubted, the net result is that quite often very little attention is paid to evidence of alternative subsistence forms and their associated cultural implications. The archaeological and ethnographic reports often only include the mandatory list of animal and vegetable species which are also potential food resources.

There is, however, inconsistency in the ethnographic reporting. While on the one hand it is generally assumed that the typical Plains tribes can be characteristically defined by "an absence of fishing" (Wissler 1950:222) (with the exception of Mandelbaum 1979), on the other hand most Northern Plains tribes were recorded as having a detailed knowledge of fishing practices, edible fish species and fish behaviour. Some groups recognized fishing in their calendars of the moon (Cree; Hayden 1863:246) and season (Blackfeet; Wissler 1910:41). Tales of fishing among the Cheyenne (Grinnell 1962:296-298) were also included in their myths. The ethnographic accounts, however, tend to ignore or downplay this information, concentrating instead on the large and obvious bison resource as portrayed by the detailed accounts of bison procurement and the socio-cultural and economic importance of the bison in Plains Indian lifeways. The importance of bison has not been overrated so much as the alternative subsistence resources and their impact on Plains lifeways have been underrated.

A similar case is the depiction of the importance of meat versus vegetable foods in some modern hunter-gatherer societies. Lee (1968:33) has stated that for the !Kung Bushmen, women gathering vegetable foods produce two to three times as much food by weight as men at hunting, although both groups put in as many working hours in their respective activities. As well, the majority of modern hunter-gatherer

groups (albeit living in marginal areas) studied over the last 50 years subsist primarily on resources other than meat, namely wild plants and fish (Lee and Devore 1968:4). This, of course, depends upon the area of the world that is occupied. In light of these modern examples, several things must be considered. First, although archaeologists and anthropologists generally make mention of alternate vegetable and fish resources, at present there is no evidence indicating the relative amounts and, therefore, economic importance of fish and vegetables consumed in relation to bison and other large mammals. There may be, however, periods of time when it was necessary to remain in, or pass through, certain areas that could be considered as "marginal" in terms of the bison resource. It is likely true that during these periods alternative subsistence resources were more heavily utilized. However, unless an environmentally sensitive regionalized approach is taken (see Chapter 11), and the actual utilization of these resources adequately assessed, this information will remain obscured.

There is another factor that has likely tended to obscure the actual importance of alternative subsistence resources. Hunting is generally a male activity among hunter-gatherers (Lee and Devore 1968:7). The early explorers/traders and ethnographers were also consistently males and most of the latter employed male informants. These male informants would likely consider the male ideal to be a

bison hunter and the only "proper" food to be bison. The informants would create a male-oriented view of the Northern Plains society for the recorder, and in the case of most of the 20th Century ethnographers, this view of a society was an ethnographic reconstruction - likely more prone to presenting an idealized picture. Any suspected discrepancies between the real and the ideal could not, of course, be tested or re-checked because the socio-economic system had ceased to function. The models of the Northern Plains societies created by the early ethnographers were self-consistent (Lee and Devore 1968:5), as each ethnographer and likely each early historical recorder was presented with the ideal male/bison hunter view of Northern Plains subsistence economies. As a result, the actual role and importance of fishing to Northern Plains groups in their overall subsistence economies was regarded as insignificant unless special circumstances warranted its practice.

The fact that Northern Plains Indian groups generally exploited bison whenever possible is obvious. Early traders remarked and were often told that bison was the only food deemed respectable. For instance, Umfreville (1954:202) stated that the Blackfoot "...will eat no kind of water-fowl, amphibious animal, or fish". Wissler (1910:20), however, remarks that this is too sweeping a statement, and "that such food was taken when the flesh of mammals was not at hand." Two themes generally run through early

ethnographers' depictions regarding the use of fish. One is that fish were eaten only out of necessity in times of food shortages or even starvation. The second and related theme is that fish is an inferior food and the flesh of mammals, particularly bison, is regarded as proper or fit. Fish might also be regarded as a taboo food, or fishing and fish-eating regarded as shameful and beneath a hunter. While Umfreville's (1954:202) statement is rather extreme, it is fairly typical of the accounts given to early explorers and used by the early ethnographers.

Kroeber (1908:148) reported that, "Like most other tribes of the Plains, the Gros Ventre subsisted almost entirely on the buffalo, and their culture depended to the usual degree upon this animal." He also mentions that smaller mammals, such as bear, fox and gopher, were exploited as food resources along with the eggs of song birds. However, "Fish were not caught except by children for amusement" (Kroeber 1908:149). Ewers (1958:86-87) had this to say about some Blackfoot preferences:

> Some flesh foods were taboo to many, though not all, Blackfoot Indians. Prairie Chickens, wild geese, ducks and curlews were plentiful, and the mountain streams full of trout, but most of these Indians would eat neither fish nor fowl. Although the majority of the Blackfeet regarded fish as unclean, the Fish Eaters band of the Blood Indians derived their name from their custom of eating them.

Ewers (Ibid.) also adds that:

> In spite of the variety of other foods available, the Blackfeet called the buffalo

> their "real food". When they were scarce, the Indians were miserable.

It is interesting to note that Kroeber's Gros Ventre informants recognized a group also called the "Fish-eaters" or the nanwuxaaniibiinants, but the ethnic affiliation was unknown to him (Kroeber 1908:147). This band Wissler recorded (1911:21), either through his own sources or from Grinnel (1904), as belonging to the Blood tribe of the Blackfoot, and that:

> The name of the band has no relation to a founder but is supposed to designate in a way some peculiarity common to the group as a whole (Wissler 1911:18).

It seems, then, at least one Blackfoot band subsisted on fish often enough for this practice to gain some sort of cultural recognition among the remaining Blackfoot bands and the Gros Ventre.

Wissler (1910) provides the most information on Blackfoot fishing practices, but he too adheres to the common theme that fish were usually regarded as an inferior food, or one taken largely out of necessity. He does, however, provide a good descriptive account on the fishing methods. The following passages are generally representative of the ethnographic view of fishing's importance in Plains Indian subsistence practices.

> In the manner of animal food, the Blackfoot naturally belong to the Missouri-Saskatchewan type, the buffalo and animals of the deer-kind furnishing the main support of life. While the disposition of the Blackfoot to refuse fish can scarcely be taken as

characteristic of the area, positive information for most tribes is wanting. The Gros Ventre did not make much use of them. [Here Wissler cites Kroeber 1908: 149]. In the south, the Navaho and the Apache, tabooed fish, while among the Dakota and Cree they sometimes formed a considerable part of their winter food, though apparently from necessity rather than choice. As practically none of the buffalo-eating tribes touched the salmon area, the disinclination to use fish may be due to economic conditions. While the Blackfoot were essentially a hunting people, and game was taken at all times of the year, certain seasons were recognized. Buffalo bulls were regarded in the best condition about June of our calendar. The cows on the other hand, were prime "when the leaves began to fall", this being in recent times the great hunting season. The time for fishing was the Spring of the year "when the nighthawks first began to call".

The streams in the region occupied by the Piegan and Blood abound in trout and other fish, which in times of starvation and especially after the buffalo began to disappear, became an important food item. Fish were never speared or shot, but taken in traps called piskin, the name for buffalo pound. A V-shaped bar of boulders was constructed in the stream, the apex pointing down the current. Such bars were partly of natural formation. Logs or poles were laid above this bar and a weir constructed by inclining sticks against them, held in place by strips of willow bark. At the apex of the V, an enclosure of poles was built up cabin-fashion, the interstices being of a size to let the water flow through freely, but to hold the fish. The bar and weir obstructed the current sufficiently to allow this enclosure to be placed below its level, so that the free current fell over it through a chute.

A simpler but similar method was to weave a kind of basket trap. This was made of

> willow twigs about 5 mm in diameter and a meter in length. This basket had the usual bottle shape seen in fish traps, but its structure was crude, being nothing more than willow rods bound at intervals to hoops of the same material by strands of bark [Figure 10.1]. In operation, weirs were constructed as before, though less elaborate, and the mouth of the basket placed at the apex so that the free current ran through it longitudinally. There was no contrivance to prevent the fish from passing out again at the mouth, but the strength of the current was usually sufficient to force them into the apex of the trap where there was room to turn. This method was regarded as of ancient origin. Both methods were used in Montana until prohibited by the state fishing laws.
>
> There is no satisfactory evidence that basketry was one of their [the Blackfoot] arts, though the Piegan claim to have made some crude fishing traps (Wissler 1910: 28, 39-41, 43-44)

Wissler's (1910) descriptions provide more detailed information than most. Particularly important is the mention of the economic importance of fish that is, as per usual, weighed against the bison and other large mammals, noting that fishing may be considered uneconomical since large fisheries are considered to be outside the Plains culture area, and it is only after the bison begin to disappear in the historic period (i.e., after 1880-1890) that fish become an important food item, even though the weir-trap method is regarded as ancient in origin. The validity of the statement, of course, may never be proven archaeologically, as weirs constructed in rivers would be subject to rapid disintegration through water and ice erosion, but it is

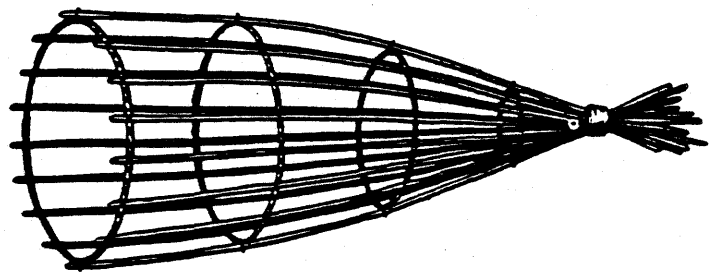
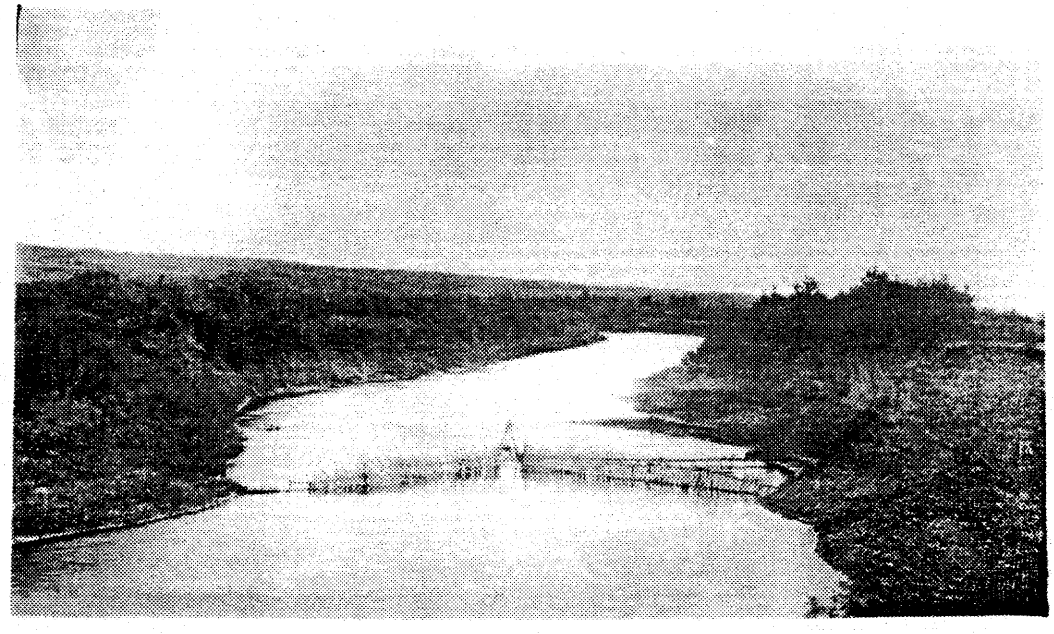


Figure 10.1: Blackfoot/Piegan Basket Fish Trap (Wissler 1910: 40).

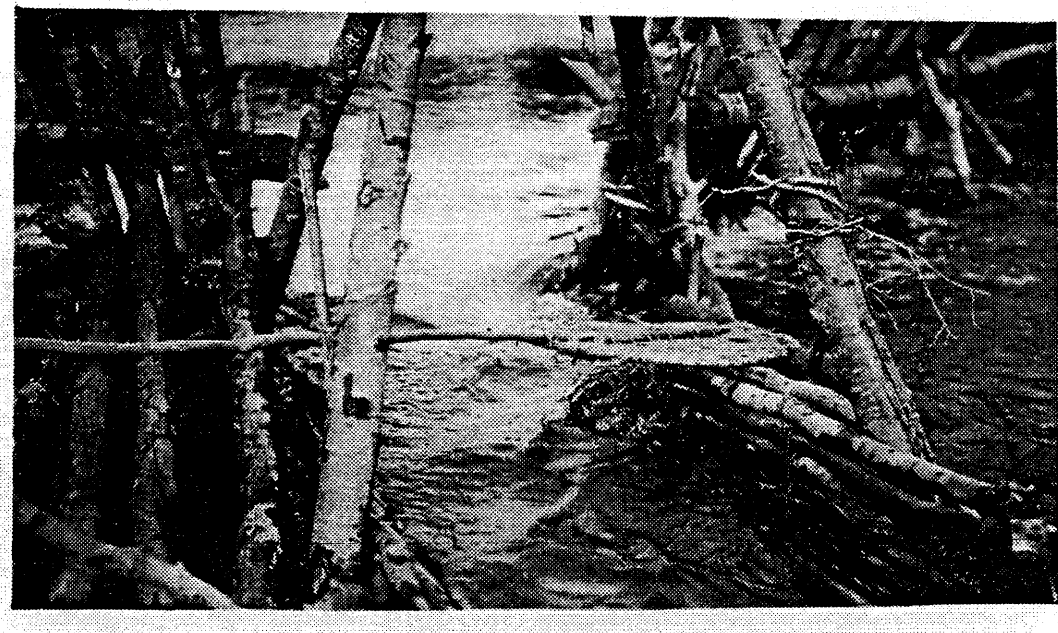
likely that the weir, like the bison pound (which notably shares the same name), is a practice with a long period of use by prehistoric Northern Plains groups in prehistory (Figure 10.2).

It is interesting, however, to note that Lowie (1963: 19-20) provides a similar summary of fishing. Lowie has obviously drawn heavily from Wissler's (1910) work mentioned above, but provides some additional information about other groups:

> Nowhere in the area [Great Plains] were fish the staple, but sundry tribes caught fish at least when other food was scarce. Thus, if short of meat, the Cree caught river fish with the aid of weirs, scooped them up, and clubbed them; in the winter they speared fish at open places in the ice. The Blackfoot, in times of need, trapped fish in crude basketry traps. The Omaha speared fish with sharpened wooden sticks or shot them with special headless arrows. Mandan and Hidatsa village sites contain considerable numbers of catfish bones, suggesting that these villagers attached



Plains Cree Fish Weir, Pound maker Reserve, Battle River, Saskatchewan (June 1911). Neg. No. 16090 (Photo -- P.E. Goddard. Courtesty Department of Library Services, American Museum of Natural History.)



Close-up of Entrance to Fish Basket, Plains Cree Fish Weir, Pound maker Reserve, Battle River, Saskatchewan (June 1911). Neg. No. 16091 (Photo-- P.E. Goddard. Courtesy Department of Library Services, American Museum of Natural History.)

Figure 10.2

> rather more value to such fare than most people in the area. This is likewise indicated by the ritualistic aspect of catfish capture, the right to make a trap being regarded as a purchasable ceremonial privilege. The fishermen set up a weir of 6-foot poles in deep quiet water and used a basketry trap. Modern Iowa deny that their ancestors took fish in any other way than by spearing. The Eastern Dakota, who of course are not geographically Plains people, consumed quantities of turtle and fish, but did not like to have them to the exclusion of meat. They hooked, speared, and shot fish with arrows. Whether the hooks were of native make remains questionable. The absence of reference to nets and the denial of the use of narcotics for drugging fish are noteworthy (Lowie 1963:19-20)

Lowie (Ibid.) also subscribes to the notion that fish were taken only when meat was scarce. Although the Mandan, Hidatsa and Arikara are not considered to be typical Plains tribes (Wissler 1950:222), their methods of procuring fish are interesting in that they allow insights into the methods used. The fish traps used by the Arikara on the Missouri (Denig 1980:48-49), and presumably the Mandan and Hidatsa, are different from the Piegan and Blackfoot weirs and basket traps (Wissler 1910:28, 39-40). Denig describes the Arikara method of fishing as follows:

> They [the Arikara] are, however, good fishermen, which they take by making pens out of willow planted in the Missouri eddies and meat thrown in. The fish entering, the door is closed upon them, and the men jump in and throw them out. In this way great numbers of fish are taken in the summer when they have but little else to occupy their time. The stationary Indians are fond of fish. The roving tribes show but little relish for

them (Denig 1980:48-49)

Arikara fishing traps, although not central to this study, are worth mentioning for their contrast in construction to the weir or basket trap. It is also interesting to note, as Lowie (1963:20) points out, that nets are apparently unknown to Plains Indian peoples, either in the Plains proper or on the Parkland periphery. The use of fish nets is probably an historic European innovation to the Plains area; and as a consequence, most of the fishing would have to be done during periods of open water when application of the weirs or traps or pen-traps would be possible.

The Cheyenne, who are regarded as one of the tribes manifesting "the typical culture" of the Plains area (Wissler 1950:220), also made use of fish. The Cheyenne are said to have come west to the great Plains from a Woodland home around the Western Great Lakes. During their movement westward, they settled for some time (estimated to be in the late 1600's or early 1700's) along the Middle Misssouri River and were closely allied with the Mandan, Hidatsa and Arikara. With the introduction of the horse (c. 1760) they adopted a nomadic Plains lifestyle (Hoebel 1960:1, 2). Most investigators note that the Cheyenne are peculiar in their use of fish, claiming that this behaviour is a departure from other tribes inhabiting the Plains during the same period. Grinnell (1972:308) suggests that, "It may be conjectured that they brought from their earliest eastern home their

fondness for fish, as well as the methods employed in taking them". Later investigators, such as Hoebel (1960:64), are quick to attribute this fondness for fish as "a heritage from their days in the woodlands." The Cheyenne methods of catching fish, however, are interesting in this respect. Two methods are mentioned including an ancient lake-fishing technique similar to that practiced by the Omaha (Fletcher and La Flesche 1911:312). This is a type of moveable barrier or weir that acts more like a net than a stationary fence or weir. Grinnell (1972:309) uses the term net, but the device is more basket-like in construction than a string net.

> It was their practice to make nets of willow twigs tied together with strings of bark and sinew, and to stretch them out diagonally from the shore into the shallow water. These nets were often very long. Men stationed along the net held it in place, and the other men, with women and children, went farther along the shore of the lake and entered the water in a line, some of them going out as deep as they could go, and walked toward the net, driving the fish before them. When they reached the outer end of the net, it was slowly moved in towards the shore, enclosing a large space; then it was gradually dragged up into the very shallow water, and men, women and children got within it and threw the fish out on shore.

This practice, according to Grinnell (1972:309), was related to him as how the Cheyenne fished before coming to the "buffalo country". The second method Grinnell describes (Ibid.:310) is as follows:

> In modern times they caught fish in a pound or pen made of willow saplings. Such a pen

> was built by the direction and under the charge of a medicine man, who during the night when the fish were expected to enter it, remained in his lodge, not going out. His face was painted red, and his robe was drawn up over his head so that he was wholly covered and could see nothing. All night he sat alone and silent in his lodge.
>
> The people who built the fish-weir drove into the ground in the stream-bead willow saplings as thick as a man's wrist, and fastened them together with strings of rawhide. The saplings were in a circle as close together as possible, an opening or gate being left on the up-stream side. The weir was ready for the reception of the fish in the evening. Pieces of meat to serve as bait were laid in the water at the back of the weir.
>
> A man was appointed especially to watch this trap. While it was building he took willow twigs, and from them wove a sort of oval basket about twenty inches long, and eight inches in diameter, with a hole about six inches in diameter in one end; to the other end were fastened two short willow sticks which served as handles for the basket. In the morning, after daylight, the man went to the trap and looked about its walls to find a place where he could work his hand and arm in between the willow saplings, so as to feel whether there were any fish inside. If he felt fish, he called the people to come. Then taking the basket, he went to the lower part of the weir and squeezed the saplings apart, so as to leave an open space, against which he put the opening of the basket. The fish began to come out through the opening in the walls, and to pass into the basket. From that the man took them in his hand and threw them out to the people on the bank.

While the Cheyenne's "fondness for fish" may be the result of their Woodland heritage, their circular pen method of fishing was probably the result of the Plains village river fishing methods being adopted by the Cheyenne. This practice of baiting the trap area with pieces of meat, the

method of fish trap construction, and the presence of a "medicine man" who oversaw the fish trap are identical to the practices described for the Mandan, Hidatsa, and Arikara (Lowie 1963:19-20; Denig 1980:48-49). The Cheyenne oral traditions also include fishing stories (Grinnell 1962:296-298; 1972:308-309). Interestingly, none of these stories makes any mention of starvation or the absence of a more desirable food resource which would make fishing particularly necessary. There is, instead, the mention that fishing, along with the ease of fish capture and the number of fish available, is an ideal way to support a group or family.

There are various references to fishing by the Omaha in the Nebraska-Iowa area. Fletcher and La Flesche (1911:312) mention that:

> The streams and lakes accessible to the Omaha abounded in fish, which were much liked as food. Men, women, and children engaged in the pursuit of catching fish; while greatly enjoyed, it could hardly be called a sport, for it was engaged in for a very practical purpose.

The Omaha used a variety of methods to procure fish. These methods are outlined briefly by Fletcher and La Flesche (Ibid.) as follows:

> So far as can be learned there were no fish-hooks of native manufacture, but small fish were caught by means of a device called takon'hontha cni'de, made as follows: Three or four strings having bait tied at one end were fastened by the other end, about 6 inches apart, to a slender but tough stick; a cord of twisted hair tied to the middle of this stick was attached to a stout pole. This was thrown into the stream, and often as many fish as there

> were lines were caught and landed. This style of fishing was called huga'ci, a name now applied to fishing with a hook and line. As the name implies, the bait usually consisted of bits of meat (hu'tazhu).
>
> Fish were sometimes shot or speared. The former method of taking them was termed huki'de (hu, "fish"; ki'de, "to shoot); spearing fish was termed huzha'he. Another mode of fishing was by means of a kind of moveable weir of willows tied together, taken into deep water by a company of men or women, some holding the ends upright and others the centre; all would walk up the stream pushing this fence of willows before them and so drive the fish into shallow water where they were shot, speared, or caught by the hand. The willow weir was called hu'bigide, and this manner of fishing, hu'kontha.

Dorsey (1884:301; 1896: 286) also supplies similar evidence for Omaha fishing and includes one reference to their western neighbours, the Ponca, as also being accustomed to fishing in the Missouri River (Dorsey 1884:301).

David G. Mandelbaum, who conducted fieldwork at a number of Plains Cree reserves in Saskatchewan (Mandelbaum 1979:7) during the middle-1930's, attempted, like Wissler some 25 years prior, to do a "comparative and analytical study of the tribal culture", with the descriptive accounts referring "to the period 1860-1870, before the buffalo disappeared and within the memory of the oldest informants" (Mandelbaum 1979: 3). Furthermore, like Wissler (1910:5), Mandelbaum (1979) draws upon historical accounts to place the Cree in an historical perspective, and much of his interpretation of Plains Cree lifestyle hinges on the use of these records.

In regards to fishing, Mandelbaum states that:

> Fish were eaten as a change from a steady diet of meat. When poor hunting forced the tribesmen to subsist on dried meat, fresh fish were especially welcome (1979: 71).

In order to support this statement historically, Mandelbaum (1979:71) cites Henry Youle Hind (1971:414-415) and David Thompson (1916:165) in the following manner:

> David Thompson stated that the Cree "pride themselves with living by hunting animals, look on fish as inferior food and the catching of them beneath a Hunter" (Tyrrell 1916:165, in Mandelbaum 1979:71).
>
> Some fifty years later Hind remarked - "The Plains Cree are not fishermen like the Ojibways, they did not know how to catch fish..." (Hind 1971:414-415, in Mandelbaum 1979:71).

Mandelbaum immediately continues with:

> The information I received both among Eastern and Western bands indicates that fishing with weirs or spears was regarded as good fun, although the sport soon palled. However, an ample supply of fish enabled fairly large groups to gather at seasons when they otherwise would have to disperse over the countryside in search of game. Hence, fish not only added to the fare, but also expanded the size of the camps and thus enlarged social opportunities (Mandelbaum 1971:71).

The previous quotations from both Thompson (1916:165) and Hind (1971:414-415) were both taken partially out of context, providing the reader with a skewed impression not only of the Plains Cree, but, perhaps, also of the importance of fishing, in general, to Plains groups.

The quote taken from Thompson (1916:165) was extracted from Chapter Six: "Life Among the Nahathaways". The context

of this passage makes it quite clear that Thompson is referring to the Woodland Cree inhabiting the area that Thompson (Ibid.:108) refers to as the "Musk Rat Country". Thompson's Musk Rat Country is part of the "Stoney Region", which name he uses to refer to the Woodlands and Boreal Forest, which is quite separate from the Plains and Parkland regions of present-day southeastern Saskatchewan and southwestern Manitoba, the latter areas being referred to by Thompson as the Great Plains (1962:142; 1916:184). Thompson (Ibid.) noted that there were great differences, both culturally and geographically, between the Stoney region and the Great Plains.

David Thompson did not spend a great deal of time on the Plains/Parkland in comparison to the time he spent in the forested areas; however, in 1797, accompanied by Cuthbert Grant, he was in the area between the Assiniboine and Swan Rivers. He visited a number of places there, including Fort Esperance which is located on the Qu'Appelle River, several kilometers upstream from its junction with the Assiniboine River. From there he travelled southeastward across the Plains to the mouth of the Souris River (1962:157-158; 1916: 206-208). It was during these travels, although it is not certain exactly where, that he encountered an elderly Cree with whom he spent the evening. A discussion of beavers and beaver dams took place between the two men. The Cree said, in admiration of the animal:

> You see how strong he makes his dams those that we make for fishing weirs are often destroyed by the water, but his always stand (Tyrrell 1916:203; Glover 1962:155).

Thompson provides no further remark on the mention of fish weirs and it is impossible to determine the values placed upon weir construction and weir fishing by the elderly Cree, except that fishing with weirs was likely not an uncommon occurrence. Both he and Thompson were probably well acquainted with the weir structure and its usage so that similarities between the fish weir and the beaver dam were obvious to each party. This indicates that the Crees dwelling on the Plains/Parkland area of present-day southwestern Manitoba were indeed well acquainted with the practice.

Mandelbaum (1979:71) quotes Hind (1971:414-415), but citing only part of Hind's statement; but also stating that: "Hind's comment that the Plains Cree did not know how to catch fish <u>may</u> mean they did not know how to catch lake fish" (emphasis mine). When Hind's statement is seen in its full context, the lake/river distinction is quite obviously the case:

> A few of the lakes near the fort [Fort Touchwood Hills] are known to contain fish, and it is possible that all of the large fresh water lakes in this beautiful region also abound in them. The officer in temporary charge of the post stated that the people here had only known of the existence of white-fish in the Last Mountain Lake for three years; they are now taken there in

> the fall and it is probable that the fishery recently established will become of great importance to this part of the country. The Plains Cree are not fishermen like the Ojibways, they did not know how to catch fish when the attention of the people at Touchwood Hills Fort was first directed to the treasures of Last Mountain Lake. Mr. Hoover, the officer in charge at the time of my visit, told me that he had first observed whitefish under the ice in November of 1854, and since that period they have established a fishery which provides the fort with an ample supply for winter consumption (Hind 1971:414-415).

In addition to meaning that they may not know how to catch lake fish rather than river fish, Mandelbaum (1979:71) has also not considered the season of the year in which the remark was made, nor has he given any consideration to the needs of both the Cree or the fur traders involved.

It would seem that Hind's Mr. Hoover consulted the local Plains Cree on how to obtain fish from Last Mountain Lake after freeze-up. The Cree likely did not know how to retrieve large numbers of white fish from the frozen lake if they had no use of nets for lake fishing. This does not mean, as Mandelbaum (Ibid.) represents, that they were not fishermen, as the partial quote from Hind (1971:414-415) would seem to suggest, but more likely that the Cree were busy procuring bison in pounds after fall freeze-up and there was no need to fish in the lakes during early winter. Interestingly, Mandelbaum does not consider this, yet he claims that fishing was usuallly done when meat was scarce. However, he fails to see that the abundance of meat may also

be part of the reason that Hind made the statement that he did.

The only reference this author has found that mentions winter fishing practices on the Plains is from Mandelbaum:

> In winter, fish were speared at open places in the river ice made by inflowing springs. A fire was built on land and a birchbark torch was set up close to the hole. The spear was made of a five foot willow or saskatoon stick which was forked at one end, and which had both prongs sharpened. The spear was held near the butt end with both hands and plunged down almost perpendicularly. These open places in the ice were not individually owned and "a man would only be too glad to have a bunch of people come together to fish at a hole." Holes were not chopped in the ice for fishing (1979:73-74).

It is quite likely, however, that winter fishing became more common once the bison became scarce.

Mandelbaum assessed the importance of fishing to the Plains Cree as follows:

> There can be no doubt that they caught river fish. In general, the tribe kept away from the lake shores, never fishing in lakes.
>
> Practically all of the fishing was done in the winter and early spring. In summer a man might shoot at a sturgeon fin sticking out of the water, but no serious efforts to catch fish were made (Mandelbaum 1979:71).

There were, however, undoubtedly times when serious efforts to catch fish were made.

On the 10th of September, 1857, Hind and his party ascended the Pike or Jackfish River, which flows into the

northeast of Lake Winnipeg. The area, at the time, was inhabited not by Plains groups but by the Swampy Cree and Ojibway. The description Hind gives of their weir and the fishing methods used at the weir encountered on the Jackfish River are insightful and deserves mention here.

> We at once ascended the Pike or Jack-Fish River to the "basket" or weir erected across it by the Indians, about a half a mile from its mouth, for the purpose of procuring fish. The basket was much broken, and when we arrived, was covered with turkey-buzzards waiting to pounce on any fish that might get entangled in its meshes. By repairing the basket and watching it all night we caught an abundance of fish of four species, viz. gold-eyes, wall-eyed pike, suckers, and pike...The Indians catch fish by means of these weirs or traps in large numbers, and this mode of capture is practiced by most of the North American tribes; the traps varying in construction according to the locality or ingenuity of those by whom they are erected. The one by which we were fortunately enabled to procure a supply of fish at the Pike River consisted of a fence of poles stretching from one side of the river to the other; they were sloping in the direction of the current, like the inside of a mill-dam and allowed the water to pass through but not the fish. Near the bank on one side, there was an opening in the weir about a yard in width to allow the fish descending the river to pass into a rectangular box, with a grated bottom sloping upwards, through which the water flowed and left the fish dry. The fish very seldom entered this pound in daylight, but during the night they poured in in great numbers. In order to secure all that come into the trap when it is prepared for catching fish, an Indian sits beside it all night with a wooden mallet in his hand with which he strikes the large fish on the head to prevent them jumping out. He is kept busily employed pitching them out on the bank, and in the morning there is a large heap for the women to clean and cut up. The fish came into the trap almost as fast as we could

> pitch them out, and we caught in a short time 111 gold-eyes, 44 wall-eyed pike (called perch by the half-breeds), 16 sucking carp (or suckers) and 11 pike, making 182 altogether (Hind 1971: 490-491).

Although Hind's (1971:490-491) description of the fish weir varies slightly from those described for the Plains tribes, it is interesting to note the species and large numbers of fish that were obtainable in one night's fishing.

Mandelbaum (1979:71-74) recorded the following account from his Plains Cree informants regarding the use and construction of fish weirs.

> Weirs were constructed when, according to informants, the fish ran downstream in the spring. Two converging barriers of logs and stones were stretched across a stream. At their apex a quadrupod made from four forked logs, interlocked at the top, was erected. Suspended from this strand was an inclined trough-like basket made by lashing together a set of parallel poles which had the bark stripped. One end of the trough lay below the surface; the other end was elevated above the water. The rush of the current swept the fish up on the poles. The water escaped through the interstices of the poles while the fish were pushed higher up the trough by a man who wielded a netted scoop. Sometimes men waded into the river above the weir and threw stones into the water to send fish downstream... The weir was usually operated at night. One man stationed at a place where the fish came into the trough and dangled a stick in the water with which he felt the fish enter. At a signal from him, a second man swept the fish higher in the trough with a scoop; a third man clubbed them (Mandelbaum 1979:71-74).

Mandelbaum, like most of his immediate predecessors, most notably Clark Wissler under whom he studied, failed to

realize the significance of fishing to Plains Indian economy and his work is also an attempt to place the Plains Cree in their "historic prime" as primarily bison hunters. Furthermore, he regards both spring weir and winter spear fishing as a sport, the latter more common than the former. He stated that fish were eaten for variety in diet, especially when the hunting was poor, or when peple were subsisting mainly on dried provisions (Mandelbaum 1979:1).

Again, the starvation/food shortage theme is prominant as an explanation for fishing, although with a different twist added - that of taste preference. Taste preference was probably very real as a factor in the decision by the Plains peoples to fish or not to fish. The fact that it is regarded as a sport also implies that the Plains Cree themselves did not consider fishing as equivalent to meat hunting, placing less value on it, but at the same time, it seems to have been an acceptable and not uncommon pastime under the certain circumstances.

There is very little direct evidence that the southern bands of the Assiniboin in the Upper Missouri drainage basin actually fished during the mid-1800's. Several investigators (Lowie 1909; MacLean 1896:25) mention that the Northern Assiniboin or Stoneys fished with weirs. According to Rodnick (1938:27-28), the more southern bands of Assiniboin learned the techniques of both weir fishing and spear fishing from the Northern Assiniboin during the 19th Century. Ray

(1972:46-47) notes that the Assiniboin fished in spring during the historic period and there are several historical references to "Indians" fishing in areas commonly occupied by the Assiniboin and also by the Cree (H.B.C.A., P.A.M., B 22/e/2). According to Rodnick (1938:28) fishing among the southern Assiniboin bands became so common that "'medicine' was made to be sold that would guarantee that fish be caught, or that they be speared, to offset the element of chance". Fishing undoubtedly became more common as the bison became more scarce after the middle of the 19th Century. However, the Assiniboin example provides a good case for the adoption of a regionalized approach. Such an approach would demonstrate that in some regions, at certain seasons, fishing provided a stable subsistence base for some Assiniboin bands, while in other regions, members of different bands of the same tribe relied on more "typical" Northern Plains resources. Whether or not the southern Assiniboin actually fished is open to debate. If they did not fish during certain periods, then they were the exception rather than the rule on the Northern Plains.

It is evident that the Plains Cree, Assiniboin and Ojibways of southeastern Saskatchewan and southwestern Manitoba fished with weirs. The evidence for this is found mainly in the historical records as very little ethnographic work was done very early in this region. The most famous fish from southwestern Manitoba is the sturgeon from the

Assiniboine River - long regarded as a high quality fish. As John Macdonnel, fur trader with the Northwest Company in late May, 1794 remarked:

> All hands live upon sturgeon since we are here. That of this River [the Assiniboine] the best in the world as far as I am acquainted (Wood 1984:108).

Hind (1971:283) exploring the Assiniboine River a few miles east of present-day Portage La Prairie, Manitoba, in mid-June, 1858, noted the following:

> In descending the river for a few miles to inspect its banks, we had occasion to pass by a fish weir, where several Ojibways from the camp near the Portage were watching for sturgeon with spears in their hands. They took no notice of us as we passed, being too busily engaged, but on our return to the encampment we found them waiting with fish to barter for tobacco and tea.

Hind's later example is noteworthy, since this is one of the very few passages encountered by this author that reflects the use of fish as a trade item. While this may be a direct result of the presence of Whites in the Portage la Prairie area providing a market for sturgeon, it also suggests that there may be an alternative explanation for Natives fishing during the historic period and after the bison became scarce - that being one of trade. Hind (1971: 487) reported that he obtained some "fish pemmican" (dried fish, pounded and mixed with sturgeon oil) "from an Indian" while travelling towards Lake Winnipeg from the Little Saskatchewan River early in September. References to similarly preserved fish are rare, however, in the historical

literature. How long-standing this practice was, and what its consequences were to the fur trade remains unanswered, but it may indicate that food shortages alone may not be the only motive for Native peoples fishing in the 19th Century.

In an account of the area near Brandon House (H.B.C.), in his "general Report of the Red River District" written while stationed at Brandon House in May, 1819, Peter Fidler wrote that:

> Sturgeon ascend the Red and Assiniboyne Rivers every Spring and pass Brandon House on their way up about 10 or 14 days after the ice breaks up which is about 23rd April. Some of them ascend as high as the Shell River they return about the middle of June towards Lake Winnipeg & the natives generally make fences across the river to prevent their descent when they return and kill them when required the greatest part of the summer for their subsistence they generally weigh from 30 to one hundred lbs. (H.B.C.A., P.A.M. B 22/e/1).

In a later report from Brandon House in 1823 by John McDonald, then Chief Factor at Brandon House, it is noted:

> Our sole dependence for subsistence in the winter is upon the Buffaloe, and when they fail, the peoples are reduced to great extremitites. Moose are not to be found in this part of the Country, because there are no thick woods. And there are but few Red Deer and not at all to be depended upon for the support of the people in the winter. In summer fish may be caught both at River la Souris and River Qu'Appelle by means of wears (sic), upon which the people may partly subsist during that season (H.B.C.A., P.A.M., B 22/e/2).

In 1852, the Reverend C. Hillyer of the Church Missionary Society (Anglican) passed the winter at Fort Pelly

(H.B.C.) in southeastern Saskatchewan on the interface of the Mixed Woodland Forest and the Parklands. He noted that both the Cree and Saulteaux, who were likely Woodland dwellers, stayed for periods of time at the fort, but that the Plains-oriented Assiniboin were also present. In a description of the country and its resources, Hillyer states:

> Carrots and onions grow wild, also gooseberries, raspberries & strawberries. We caught as many as a hundred fish Jack & perch, in a night by means of a kind of basket trap (S.A.B., #S-B81, P.A.C., Reel No. A.88, C.M.A., Series C 1/0).

Likely, the basket trap is similar to that described by Wissler (1910:28, 29-40) for the Blackfoot and Piegan, and although Hillyer does not specifically state that Natives were responsible for this method being employed, it seems by his description that he is not too familiar with the fish basket trap, and that he and the others associated with his mission regularly employed the local Cree and Saulteaux to hunt for them, and likely to fish as well.

The Reverend James Settee, a Cree recruited into the Church Missionary Society (Anglican), was stationed at the Fort Pelly Mission from 1857 to 1862, and recorded on August 4, 1860 that:

> In the afternoon of this day my wife and myself made a fish-weir. I had assisted the Indians once before making one but one man broke it up in anger with other Indians. This one I made is my own, and nobody shall touch it (S.A.B., #S-B81, P.A.C., Reel No. A.95, C.M.S., Series C 1/0, p. 3).

This would tend to indicate that the weir method of fishing

was employed by Natives in the employ of the early missionaries initially, as suggested by Hillyer, and adopted by the missionaries for their own purposes.

The following October, 1852, Hillyer, accompanied by Charles Pratt (a Catechist also associated with the Fort Pelly Mission), left Fort Pelly and travelled southwest to the Qu'Appelle Lakes. It is certain that Hillyer's campsite was situated between the present-day Mission and Echo Lakes where the town of Fort Qu'Appelle, Saskatchewan now stands. Hillyer encountered mainly Plains Cree Indians at this site, who were fishing in the Qu'Appelle River on the 26th of October, 1852.

> C.P. [Charles Pratt] was also engaged in assisting them [the Crees] to gather fish. There are great abundance of them here, & most of the best quality. Sometimes as many as 1000 [a thousand] being caught in a night, by the simple means of a barrier which is not large, with a basket placed in the centre into which the fish are driven by the force of the pent up current. The barrier is made of basket work supported by triangles of large stakes, placed in the form of an angle at the apex of which the trap is placed. I think 5 men accomplished it in as many or less days (S.A.B., #S-B81, P.A.C., Reel No. A.88, C.M.S., Series C 1/0).

It is likely that these are whitefish being caught in the fall, but no species are mentioned by Hillyer. He then goes to describe the general setting of the Qu'Appelle River Valley and, in particular, the Fishing Lakes or the Qu'Appelle Lakes, but he also includes a description of Last Mountain Lake:

> The Lakes are not more than a mile or two in breadth & some not more than 4 in length, but one is I understand at least 30 [Last Mountain Lake], & very deep. They swarm with white-fish & Jack of the largest size. The Co. (H.B.C.) was catching the latter in nets in open water as late as December (S.A.B., #S-B81, P.A.C., Reel No. A.88, C.M.S., Series C 1/0).

There is, then, much ethnographic and historical information relating to fishing practices by both Parkland groups and some Northern Plains groups that inhabited Parkland areas and river valleys at least seasonally. The Qu'Appelle River, in particular around the Fishing Lakes, was noted for its fish resources during the historic period.

10.3 The Archaeological Evidence for Fishing in the Northeastern Grasslands and Parklands

A review of the archaeological evidence indicates that much of the interpretation of faunal analysis rests heavily on bison remains, since they are the most common species identified and recovered from archaeological sites both in the Plains and Parklands of southeastern Saskatchewan and southwestern Manitoba. There are very few sites excavated in, and even fewer published with regard to, these Parkland areas. As a result, very little has been done with fish remains towards interpreting their importance archaeologically. In the Boreal Forest, at sites where fish remains are common, the potential for the interpretation of fish remains is demonstrated.

Notably there is Snortland-Coles' (1979) work on the Aschkibokahn site (FbMb-1), and the subsequent analysis

carried out by Hanna (1981). Hanna outlines some of the basic procedures for fish scale analysis and recommends quite strongly to archaeologists that fish remains be given the same analytical status as is currently enjoyed by mammal remains (Hanna 1981:34-36).

At the Tailrace Bay site in the Grand Rapids Reservoir Lukens (Mayer-Oakes 1970:297-333) succcessfully attempts to integrate the fish, avian and mammalian remains into a sound ecological account of site use and seasonality.

Others (Tamplin 1977, Gibson 1976, Joyes 1969) have also attempted species identification and minimum numbers counts for the fish remains encountered.

Archaeological evidence from the Alberta Parklands has not been investigated, but several sites there containing fish have been recorded (B. Ball 1986, personal communication).

Very little archaeological evidence from the Parklands in either southeastern Saskatchewan or southwestern Manitoba has been uncovered that would allow the importance of fishing to prehistoric peoples in these areas to be properly assessed. Since the evidence is largely yet to be found, the techniques of analyzing and interpreting these remains have yet to be developed.

10.4 Ethnohistorical and Archaeological Accounts of Northern Plains/Parkland Native Fishing: Summary

A review of the ethnohistorical, ethnographic and archaeological literature on fishing among Northern Plains

and Northern Plains/Parkland groups presents a mixed picture. The ethnographic and ethnohistorical literature is rich in information on fishing, but does not go far enough in interpreting the importance, use and dependence upon fish as a food item among the Northern Plains groups. Fishing is most often depicted as a game or sport, as a pastime for children perhaps, but beneath a hunter unless starving (and only then is fishing undertaken with shame). The implication is that fishing is sporadic and an irregular event associated with periods of food shortages until the bison were being depleted towards the end of the 19th Century.

The historical records indicate, however, that fishing was undertaken by many groups that are considered to be "typical" Northern Plains groups as well as others who inhabit the Northern Plains and Parklands and follow a "typical" Plains lifestyle periodically. Furthermore, fishing can be regarded as far more common than has been previously represented by the early ethnographers studying Plains groups. Archaeologically, it seems that more work needs to be done in order to determine the importance of fishing to Grasslands-oriented peoples inhabiting the Parklands.

The historical record indicates that most of the fishing activities took place in the Parklands along rivers, but generally at river junctions or at river mouths at lake entrances. Fishing activities peaked in the spring after

break-up, when the spawning runs occurred. It is not inconceivable that some fall spawners, such as whitefish, were also taken in weirs. Fishing with weirs or basket traps or a combination of the two likely continued into the summer and early fall, at least in historic times.

Fishing with weirs or basket traps took place at night, and a weir could be built by five or six people, although as few as two individuals could construct a fish weir. Fish weirs were variable in size, some stretching the entire width of a river, others over only a portion of the stream. This likely depended upon both the river size and the number of people that the weir was designed to support. Several types of weirs were used, the most common being the V-shaped weir with a basket or box trap at the apex which always pointed downstream. This downstream orientation was likely for two reasons: the first being to take advantage of the river current to aid in the trapping of fish as the weir acted as a dam forcing the river water through the apex so the artificially-narrowed stream converged on the trap box or basket with greater force; the second reason being that fish would head downstream after spending the evening in the shallower waters up-river, often feeding or returning from their spawning migrations.

The returns from a well-managed fish weir were undoubtedly large, as reported by Hind (1971:490-491), and Hillyer (S.A.B., #S-B81, P.A.C., Reel No. A.88, C.M.S.,

Series C 1/0). One night's fishing could easily produce between 100 and 500 fish. A conservative estimate of .5 kilograms of meat per fish would yield between 50 and 250 kilograms of edible meat at a minimum, certainly enough to sustain several families at a time.

Fish weirs would likely have to be at least partially reconstructed or, at least, repaired yearly, as water and ice action would damage the wooden pole and sapling "basketry" portions; however, the rocks used to dam the water and to fortify the wooden structure would likely remain fairly intact unless subjected to severe ice jamming during the spring break-up. This would probably result in people returning to the same weir location or fishery year after year, or at different times during the year in the months of open water.

11.0 THE DEVELOPMENT OF AN ENVIRONMENTALLY-SENSITIVE REGIONAL APPROACH

11.1 Introduction

In Chapters 2, 3, and 10, it has been suggested that a more sensitive approach be taken in order to better understand and interpret Northern Plains lifeways and subsistence practices. Chapter 2 outlined the need to develop an integrated approach to understanding the terrestrial and aquatic environments. In Chapter 3 it was shown that while there is a general understanding of the cultural history of southern Saskatchewan, there is, to date, very little specific information on the culture history of the Qu'Appelle Valley. Indeed, so far, the interpretation of culture history there has relied on information taken from elsewhere on the Northern Plains. Chapter 10 outlined the minimal interpretations given to alternative non-bison subsistence practices in general, and fishing in particular, among Northern Grasslands/Parkland groups. In each chapter there is one theme that comes through this largely descriptive background, and that is: there is very little information known about the lifeways of prehistoric and early historic groups inhabiting the Northern Grasslands and Parkland in Saskatchewan generally, and what is known has been (1) generalized from other areas; and, (2) applied in a very general way to the prehistoric and historic period of the Qu'Appelle Valley.

When one observes the archaeological material from the

Lebret site, it is obvious that in some respects the material is very similar to the cultural/historical information previously known about southern Saskatchewan. In a very general way, the chronological ordering (see Chapter 5, Table 5.1) is identical to that postulated for southern Saskatchewan by Dyck (1983), and outlined in Chapter 3. The generalizations derived from other Northern Plains sites apply, with few exceptions, to the Lebret site chronological sequence.

However, the Lebret site is unique in a way. It is a fishery that has operated at the Grasslands/Parkland interface for 3000 years. Yet, when one considers the ethnographic and archaeological information for southern Saskatchewan and the Northern Plains in general, a picture is obtained of cultural lifeways with a heavy and central dependence on bison beginning around 9000 to 10,000 years ago and continuing until the 1880's. It is also the accepted view for the cultural complexes represented at the Lebret site. Evidently, however, this view does not totally apply to the cultural complexes at the Lebret site, and clearly, based on evidence from other areas on the Northern Plains, the lifeways witnessed at the Lebret site cannot be generally applied to the whole of the Northern Plains culture area. This chapter will attempt to present a solution to this puzzle. Many factors, both historical and contemporary, must be considered in order to address the issue properly. These

factors are multi-faceted, and at times require some consideration of contemporary anthropological and archaeological thoughts and practices.

11.2 The Development of Northern Plains Anthropological Culture History

The mainstay of anthropological and archaeological interpretation of Plains Indians' lifeways has been, and continues to be, the works of early ethnographers and their students. Clark Wissler, Robert H. Lowie, Alfred A. Kroeber, David G. Mandelbaum and John C. Ewers are among those who figure most prominently in the Northern and Great Plains culture area. These early Plains anthropologists compiled the bulk of their information in the first half of the 20th Century, acquiring both current data and oral history on Plains Indian lifeways from living informants and by consulting historical sources. The methods employed were organized to acquire as much factual data as possible about the lifeways of the people studied before this information was lost to time. These data were used to present a general picture of a core culture area. Several groups from an area were usually studied extensively and these "typical" groups or tribes came to represent or depict the standard lifeways of that culture area. It was assumed that a general understanding of the lifeways of all other tribes in the same broadly homogeneous geographical area could be reached in this way - making certain allowances for minor ethnic or tribal preferences.

There are 31 tribal groups, according to Wissler (1950:220), in the Plains culture area:

> Of which eleven may be considered as manifesting the typical culture of the area: VIZ., the Assiniboin, Arapaho, Blackfoot, Cheyenne, Comanche, Crow, Gros Ventre, Kiowa, Kiowa-Apache, Sarsi, and Teton-Dakota.

The principal culture traits characterizing these "typical" Plains tribes included:

> dependence on the buffalo or bison, and the limited use of roots and berries; absence of fishing; lack of agriculture; the tipi as a movable dwelling; transportation by land only, with a dog and the travois (in historic times the horse); want of basketry and pottery; no true weaving; clothing of buffalo and deerskins; a special bead technique; a high development of work in skins; special rawhide work (parfleche, cylindrical bag, etc.); use of a circular shield; weak development of work in wood, stone and bone. Their art is strongly geometric, but as a whole, not symbolic; social organization tends to be the simple band; a camp circle organization; a series of societies for men; sundance ceremony; sweat house observances, scalp dances, etc. (Ibid.:222).

On the eastern border were 14 tribes "having most of the positive traits enumerated above and, in addition, some of the negative ones" (Ibid.). (Although it should be noted that fishing is not considered by Wissler to be a principal trait of the Eastern Plains dwellers). On the western border three tribes, the Wind River Shoshoni, Uintah and Uncomahgre Ute are mentioned as possessing some Plains traits, but also some additional characteristics not found in the core area

tribes (Ibid.). On the northeastern boundary Wissler (Ibid.:224) mentions:

> the Plains-Ojibway and Plains Cree who have many traits of the forest hunting tribes as well as most of those found in the Plains. Possibly, a few of the little-known bands of Canadian Assiniboin should be included in this group in distinction from the Assiniboin proper.

When Wissler's culture trait list is examined, it is obvious that several inaccuracies and omissions exist. However, allowances must be made for the situation and era this list represents. The crucial point to understand is that it is generally a static list, compiled at one point in time, with much of what was described already outdated and defunct as a viable lifeway. Many of the traits described were only alive in the memory of Wissler's informants, or in the historical accounts available to him. However, Wissler and other ethnographers of his time attempted to present a characterization of past lifeways through the means described above. As Wissler (1910:5) stated about his work on Blackfoot culture history:

> We have sought by supplementary aid of all previous contributions [historic writings of Alexander Henry the Younger, Maximillian, George Bird Grinnell] to present a fairly complete view of this culture as it existed in its historic prime, recognizing however, that at all times during this interval it was subject to modification from contact with both White and Indian, and that it cannot be said to have been strictly stationary at any time during the period.

Because Wissler and his contemporaries attempted to present

cultures in their "historic prime"; a depiction that usually transcended, but did not always totally ignore exterior influences of cultural contact, their works have become a standard for Plains anthropological/archaeological interpretation.

It is unnecessary to argue the accuracy of each principal trait, because while they are presented as principal character traits, they are, in fact, generalizations, and specific cases could likely be presented to support or refute several of these traits. The failure to understand that these are generalizations is just as erroneous as to accept them as unqualifiable statements of fact. Nevertheless, it is important to realize how this list of traits has been influential in the archaeological interpretation of Northern Plains Indian lifeways in general, and in the archaeological interpretation of Northern Plains Indian subsistence patterns in particular, in order to arrive at a proper perspective of current archaeological practices in this area.

The initial trait, "dependence on buffalo", and most of the remaining traits, particularly those asssociated with subsistence, settlements and dwellings, clothing and even social organization, lend the impression that Plains Indian lifeways involved a near total dependence on bison. Traits such as "nomadic lifestyle" depict a wandering group following the bison herds' seasonal movements. This

lifestyle precludes major agricultural practices and permanancy in settlement, other than within a general environmental range, either Parkland/Forest in the winter or open Prairie/Grasslands in the summer. A very limited use of roots and berries suggests an opportunistic lifestyle in which alternatives would be exploited so long as scheduling conflicts with bison procurement were avoidable. An absence of fishing suggests that another food resource commonly exploited by many other Indian groups was also generally passed over in preference to bison. Even the social organization, albeit loosely defined as: "tends to be the simple band", suggests the great dependence on bison procurement and general mobility. In short, the Plains Indian lifestyle in its "historic prime" (Wissler 1910:5) has been generally depicted as centred year-round almost totally on the pursuit of bison. The bison resource has been very well documented, but it seems most likely that this has occurred at the expense of understanding the importance of other major, but less visible, food resources.

Northern Plains anthropologists and archaeologists have been generally too complacent in their acceptance of Wissler's typical Plains group principal culture traits, and also in accepting the loose qualifier that is at the heart of the culture area concept: that on the culture area's borders there existed tribes possessing many, but not all, of the typical Plains traits. The result of this is that instead of

adopting a regional outlook that explained and studied differences between core Plains dwellers and those inhabiting the more peripheral Parklands, the latter areas were treated as inconsequential and their apparent departures from the core area lifestyle had little to contribute to the understanding of Plains cultural patterns. Beyond a point, however, the generalized relationship between a cultural group's lifeways and its geographical location breaks down. It is suggested that on the Northern Plains this breakdown occurs at the band level of sociocultural organization.

The early Plains ethnographers developed the principal culture trait list for the sociocultural level of the tribe. A tribe is a political unit. On the Northern Plains this political unit might, but did not necessarily have to, coincide with a linguistic unit (Lowie 1963:10-11). In other words, there may be more than one tribe, or politically separate unit, within a linguistic unit. Therefore, the tribe may, but cannot always, be defined by linguistic similarity alone. In searching the literature on the Northern Plains, it is difficult to obtain a more definitive description of a "tribe", although the majority of ethnographers use this term freely.

It is not sufficient to describe a particular group within an area as a tribe, if that group is forced by ecological factors to reside in several smaller groups during certain seasons in order to be in balance with the area's

resources.

When one looks at the historic residents of the Northern Plains/Parklands region, it is clear that the tribal unit, wherein everyone who is a member of the particular tribe resides together, is actually a rare occurrence that could only happen seasonally.

Both the ethnographic and historical sources indicate, that throughout much of the year, Northern Plains groups resided in a self-sufficient political unit referred to here as the regional band. Wissler (1950:222) used the term "simple band", but the term "regional band" is adopted here because this study is not only concerned with the social organization of these groups, but also with the environmental factors that influenced their social organization.

Like the term "tribe", it is difficult to find a definitive description of the term "regional band" (or the "simple band") as it applies to Northern Plains groups. Helm (1965:376), however, has proposed a definition of a regional band for Boreal Forest groups. While Helm's (1965) definition is not directly applicable to the Northern Grasslands/Parkland area groups, Russell (1982:189) has used Helm's basic concepts of a Boreal Forest regional band for the Parkland Cree following Meyer (1967). The definition of a regional band proposed here utilizes some of the concepts proposed in those works cited above, but it has been modified for use in the Northern Plains/Parkland area where the

regional band is a socioeconomic unit operating within the larger tribal unit. The Northern Plains regional band, then, is politically tied to the larger unit - the tribe. The band defines itself in relation to the general and specific circumstances with other regional bands belonging to the tribe. The general circumstances include shared geographical space, languages and ideologies, as well as kin. The specific circumstances include the participation of band members in large tribal, seasonal events, such as the sundance or communal bison hunting generally occurring in the summer and fall, as well as band member participation in those tribal societies which cross-cut band level membership. These latter societies, based primarily on age and sex, were also subject to the seasonal cycle and would disband and re-organize whenever the tribal unit was able to do so.

Perhaps the common usage of the term "tribe" in the early ethnographic literature may also be the result of historical factors. These factors are primarily disease and, to a lesser extent, the fur trade. Disease, most notably small pox and measles, rapidly destroyed large segments of the Northern Plains populations in the 1700's and 1800's. The effects of these epidemics on the geographical location of the tribes affected is discussed in Appendix I. The net result of the epidemics was a drastic reduction in population that would make it desirable for all surviving members of a regional socio-political unit to band together and perhaps,

(as in the case of the Atsina with the Blackfoot), ally themselves with other tribes. Once the populations were reduced, it would be possible (or at least more desirable) for the remaining members of most regional bands to congregate together forming a group at the tribal level. This, then, was the social organization reported in the mid-1800's by Wissler's and other's informants. Certainly the tribe had always been important, but during this period it would have become much more crucial.

Likely, the political and socio-economic unit in the day-to-day life of most early historic and, presumably, prehistoric Northern Grassland and Parkland dwellers, especially during the winter and spring when food was scarce and the bison had scattered into smaller groups, was the regional band rather than the tribe. The tribe became a social reality only when optimum conditions permitted.

In southern Saskatchewan there is evidence for both Plains Cree regional bands (Mandelbaum 1979:9-13) and Assiniboin regional bands (P.A.C. H.B.C.A. Brandon House District Report 1822-1823 B.22/e/2, pp. 165-166). Each of these regional bands was a politically separate unit, tied to the larger ethnic group by linguistic and cultural similarities involving lifestyle and ethnic identification, but each exploited its own regional habitat.

The economic base of the tribe and that of the regional band was also guided by specific rather than general

circumstances. Whenever the members of a tribe were gathered together, the available food resources had to be abundant in order to support this relatively large population. In this instance, the communal bison hunt would certainly suffice, providing food for large numbers of people within a small geographical area. The subsistence economy of the regional band was likely the result of a common adaptive pattern within, and intensive knowledge of, a regional habitat. Depending on the location of the habitat, its exploitation by the regional band might be identical to that of the larger tribal unit, although on a smaller scale. Other regional bands would exploit resources common to their regional habitat.

This would indicate that while some regional bands might follow the "typical" Northern Plains lifestyle in one portion for the tribal territory, other regional bands might follow different or alternative lifestyles simply because the region they occupied offered resources that were not exploited by the majority of the "tribe". Conversely, the habitat that the regional band occupied may have periodically become devoid of the preferred or typical resource, thus forcing an alternative lifestyle to be followed for a time.

At the regional band level, then, it is possible to abandon the strict adherence to Northern Plains groups as "bison hunters" within a Grassland environment and instead view these groups with an emphasis that is particularly

sensitive to the environment of the region which is exploited by the band. This approach was first suggested by David Meyer during a discussion with the author (1986).

Syms (1977) has presented the Co-Influence Sphere Model as an alternative to the unilineal culture historic model for interpreting the variability of archaeological assemblages-primarily the ceramic assemblages from southwestern Manitoba. Syms' model is based on cultural ecological factors in which certain groups exploit different regions at different times of the year. Syms proposes a four stage model depicting the utilization of different areas. His four areas are the Core, the Secondary Area, Tertiary Area and Intrusive:

> Each Core represents the area in which an ethnic group traditionally spent most of the year or, minimally, habitually spent certain seasons of the year... Secondary Areas are those areas to which particular groups went on regular trips for a specific resource... Regular use of these secondary areas was confined to a relatively brief part of the year, often by specialized groups. Tertiary Areas represent marginal areas that were utilized briefly and intermittently, but with sufficient frequency to provide evidence of repeated settlements or resource utilization or alteration...Periodic intrusions represent infrequent visits by one or another group to distant areas (Syms 1977:5-6).

The regionally sensitive approach suggested here would deal primarily with Syms' Core, but conceivably could provide information that would also make it possible to identify the use of any of the remaining three areas. The most important

statement Syms makes towards a regionally sensitive approach is that:

> The resource potential in the region does not remain constant with respect to the resource potential of adjacent areas. Any region may be attractive to groups with a particular economic system only during certain seasons. Thus the regional potential must be established before attempting to establish the potential of a site or its locality. In order to establish the regional potential it is necessary to compare the regional potential against adjacent areas on a seasonal basis (Syms 1977:10).

There is very little difference between what Syms (1977) has proposed and what is proposed here. The differences are, perhaps, in degree. Syms (Ibid.) is primarily concerned with tribal groups, although he is quite aware of the seasonal population fluctuations within these groups for socioeconomic purposes. The regionally sensitive approach proposed here is aimed at identifying regional band subsistence activities, whether these activities are part of the "typical" activity of a tribe or solely part of regional band activity. This is very much determined by the scope of the work at hand: Syms' (Ibid.) work is a very extensive areal overview that treats a multitude of geographically separate regional habitats, while this is an intensive study of resource utilization in a single regional habitat.

11.3 The Evidence for an Available Alternative to the Core Area Cultural Historical Approach for Interpretation of Northern Plains/Parkland Lifeways

It is unlikely that all regional bands everywhere, even

of the same tribe, would exploit the same resources as the other regional bands at the same time, except on a very general level as in the case of seasons.

Two sets of data would result from the differing regional band economic activities. Those data are: (1) those which represent the more "typical" lifestyle in which each regional band participated; and, (2) those data representing different lifestyles and the utilization of the unique portions of regional habitats. Both sets of data should be used to define the characteristic economic activities of a particular prehistoric people within a given region.

As previously stated, much of the current information on southern Saskatchewan's prehistory has been taken from information gathered in other areas. This only allows for general statements to be made about the lifeways of Saskatchewan's prehistoric peoples. The data set available at present largely represents the typical lifestyle of the prehistoric peoples because it is largely known only from surface collections and very few excavated archaeological sites. In some cases, this data is likely directly applicable to the archaeological complexes found in the Qu'Appelle Valley. Undoubtedly, some assemblages there will represent prehistoric lifestyles that are consistent with typical Northern Plains lifestyles similar to those described by Wissler and others. However, in other instances (and in

particular with regards to the Lebret site data), there will be assemblages present indicating that within a particular regional habitat, and during a particular season, other lifeways were being followed. The cultural assemblages will be different from other contemporaneous assemblages found elsewhere, and these represent different activities.

The Lebret site data can be interpreted within this regionally-sensitive approach. The Lebret assemblages from different levels represent the utilization of a unique portion of a regional habitat: the Qu'Appelle Lakes, and the fish resources found there during the spring. It is proposed that the assemblages from the different levels at Lebret represent the activities of regional bands. These activities are different from those commonly described for the prehistoric peoples whose cultural remains are found at Lebret. It is interesting, however, that at this site, the Avonlea peoples, typically described as bison hunters "par excellence" (for reasons discussed earlier) are fishing while preparing the material items, notably arrow points, that would be used at a later time for the bison hunting activities for which they are so well known.

In effect, then, the Lebret site data represents the exploitation of a regional habitat by regional bands. These data may be used in conjunction with previously-recorded data to define the characteristic economic activities of prehistoric peoples in this regional habitat and, hence, the

socioeconomic importance of this regional exploitation. In order to be able to define this data, an environmentally-sensitive regional approach must be adopted.

11.4 The Utility of an Environmentally-Sensitive Approach for Interpreting Northern Plains/ Parkland Lifeways

The utility of adopting an environmentally-sensitive regional approach archaeologically would be to identify regional band activities and assemblages. This would enable researchers to provide viable explanations of alternative lifestyles that characterized different regions within an overall culture area and relate them to the overall seasonal activities of these regional bands. This approach would be useful in interpreting the differences, as well as the similarities, between contemporaneous sites and assemblages within a culture area. In short, it would allow these differences and similarities to be explained in meaningful terms rather than having the observed differences and similarities between assemblages be in reference to a supposedly homogenous culture area. The differences in archaeological assemblages within a complex should, therefore, be studied in terms of regional band activities within a regional habitat.

The area of the Fishing Lakes in the Qu'Appelle Valley may be regarded as a regional habitat. This regional habitat is part of the larger Parklands ecoregion. The lifeways witnessed here archaeologically are likely part of a seasonal

round followed by regional bands in the Parkland area.

It is most likely that Northern Plains peoples wintered in the Parklands or the river valleys where there was shelter and an ample supply of firewood. The latter would become particularly important after snow had fallen on the Plains and the buffalo chips, the other main source of fuel, were unavailable.

In the Parklands, Indian peoples could exploit the wintering herds of bison and also take advantage of the large variety of ungulates also present such as deer, elk (wapiti), and perhaps the occasional moose. In winter, meat could be preserved by freezing. Dried or preserved meat taken during the fall would alleviate lean periods during the winter.

During the early spring, however, both the people and the animals they hunted would be in generally poor condition. During a particularly harsh winter with heavy snowfall herbivores, in particular, would suffer and perhaps even starve. Undoubtedly, the people would procure bison whenever they could and save dried stores for leaner periods in the spring, but if winter pounding was unproductive and the stores of dried meat used up by the spring, people would have to resort to other forms of subsistence. Of course, at this time too, the bison would have moved out of the Parklands and on to the Grasslands. Interestingly, Alexander Henry (1965:725) stated that when the "buffalo sometimes disappear" and the Piegans "are reduced to dried provisions they call it

starving". It is during such periods of "starvation" (perhaps over-emphasized by the early ethnographers), when fish would indeed become a welcome change and a vital resource. The Plains people in the Parklands could remain for several months, if necessary, at a fish weir. Beginning as early as mid-April, when the ice came off the rivers and lakes, and continuing through May and into June, people would harvest fish as a staple food supplemented by aquatic-oriented birds and mammals found along the river's edge. The occasional bison, deer, antelope or elk might also be taken.

The spring fisheries would provide a constant and abundant source of fresh food and enable large numbers of people to remain in camps together recovering from the winter and preparing for the summer. During the summer, groups located on the Northern Plains adjacent to the Parklands could return to the weirs to fish if bison were not located and utilize both fish and the vegetable resources that the river valleys and Parkland support; however, the spring fishery would remain the most important food resource for Northern Plains groups as the bison were beginning to recover and the fruits and berries were not yet in season. This seasonal round is schematically illustrated in Figure 11.1. It is apparent that fish were never the staple food of Northern Plains peoples, but likely in the spring and perhaps the early fall fish became an important resource. Operating a fish weir would yield large numbers of fish with very

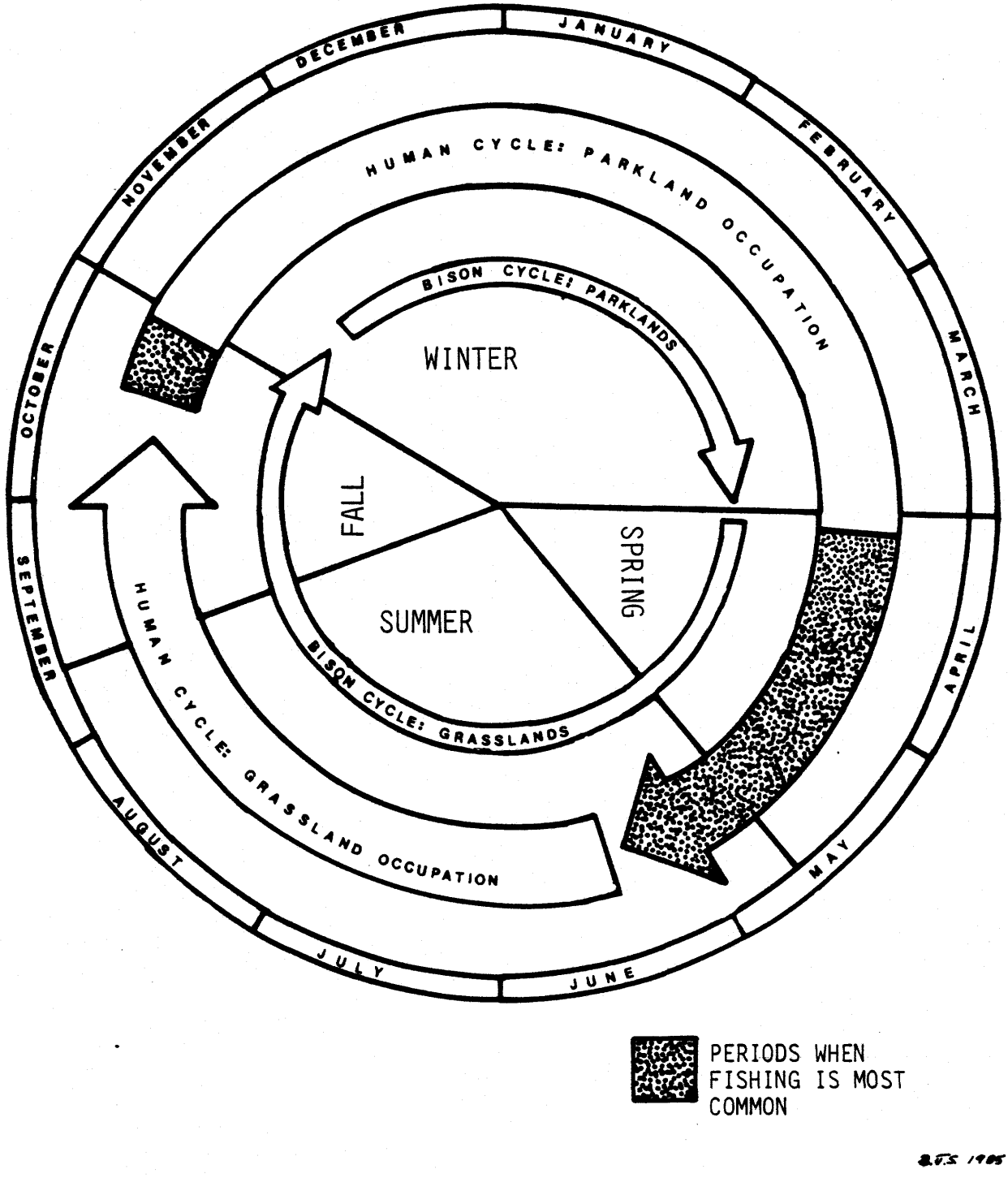


Figure 11.1: Northern Grasslands/Parklands Seasonal Cycles illustrating the periods when Parklands fishing was most common in relation to bison resources (After Smith 1985a).

little harvesting effort, enabling regional bands to stay together in the sheltered Parklands and river valleys, and thus play an important socioeconomic role in the lifeways of some "typical" Northern Plains Indian bands.

This is most likely the scenario that is witnessed at the Lebret site. It is a site where regional bands gathered in the spring to fish and replenish their material assemblage. In order to understand the prehistory of the Lebret site, one obviously cannot generalize what is known about Northern Plains prehistoric and early historic lifeways and produce a plausible explanation of what was happening at the Lebret site for the past 3000 years. It would not be reasonable to explain the Lebret site materials following the ethnographic interpretations of the importance of fishing simply because it is obvious that the reasons for fishing at this site go beyond the starvation theme, a desire for dietary variety or for sport. Fishing was obviously undertaken seriously and the reason for multiple reoccupation of the Lebret site is clearly to obtain fish. While the cultural complexes change over time at Lebret, the emphasis on the exploitation of fish remains constant.

If one was to use the culture-core area approach to interpret the utilization of fish at Lebret then one would be justified in over-generalizing and claiming that fishing is, in fact, an important Northern Plains Complex trait. This is clearly not the case everywhere. In other words, the Lebret

is fishing only a lightly-taken sport or the result of child's play. Although each of these reasons certainly could be sufficient motivation for undertaking this activity, it is highly unlikely that any one of these solely accounts for the behaviours witnessed archaeologically in the last 3000 years of remains at the Lebret site. An absence of fishing may indeed by a trait typical of core area Northern Plains groups but this cannot be said to be generally applicable in all regions. This is especially true in the Parkland regions of the Northern Plains culture area. Rather, fishing was a typical activity in the Parklands and associated valley complexes where good fishing was possible during certain periods of the year.

Therefore, fishing as part of Northern Plains/Parkland lifeways for the last 3000 years may be interpreted in terms of localized environmental resources available to regional bands (appearing archaeologically as an asesmblage), but not in terms of the tribal unit as a whole; nor the entire archaeological complex. Once the advantage of the environmentally-sensitive regional approach is realized, other details and questions may begin to be answered. The advantage of this approach in comparison to the unilineal culture-core area approach is presented as follows:

Geographical Area	Level of Socio-economic organization	Anthropological Interpretion	Results
Culture Area	Tribe	Broad & General Level interpretation	Continued reinforcement of generalizations with little or no refinement to central themes
Regional Habitat	Band	Narrower Specific Interpretations	New or different insights leading to further refinement of central themes.

Overall, the advantage of the environmentally-sensitive regional approach to understanding and interpreting lifeways in the Northern Plains/Parkland area is that no longer will all the data unearthed be forced into one general category, or if that is not possible, subject to an unsubstantiated reason (such as starvation as a reason for fishing) for the occurrence of an atypical lifeway and an associated typical assemblage or recognized complex. This approach requires that there is more than one set of data, or a number of different assemblages producing a complex. In this respect, it is identical to the Co-Influence Sphere Model proposed by Syms (1977). The recognition of the variation within a complex will stimulate new questions and hopefully lead to new answers about the Northern Plains/Parkland lifeways that will contribute significantly to the already established central themes of that culture history.

12.0 CONCLUSIONS

The Lebret site (EeMw-26) is situated between two large freshwater lakes: Mission and Katepwa, in the Qu'Appelle Valley of southeastern Saskatchewan. The site is located on the Grasslands/Parklands interface and has been a focus of occupation for 3000 years. The various archaeological complexes, from earliest to latest, in this well-stratified site include: an unidentified complex that dates around 3000 B.P., which may represent Late Oxbow, Late McKean, Pelican Lake or an early Sandy Creek Complex occupation; a Sandy Creek Complex occupation; a possible Besant Complex occupation; an Avonlea Complex occupation, and a series of Late Plains or Prairie Side-Notched Complexes which may include the presence of Blackduck ware. Middle Missouri ceramic types are found to be associated with a Late Prairie and Late Plains Fall River occupation.

The artifact assemblages, and most likely the faunal assemblage, indicate that diverse subsistence strategies were being pursued. Large game animals, most notably bison, are present, but are not dominant in comparison to other species represented in each cultural level. The fish remains are abundant and consistent throughout each occupation represented.

The presence of fish in the faunal assemblage of so many "typical" Northern Plains archaeological complexes prompted the study of the importance of fishing as a central theme for

this thesis. While fish remains generally make up between 20% and 50% of all faunal remains recovered at the Lebret site, it is clear that other resources were being exploited simultaneously. It is thought, however, that the fish available in large numbers in the spring during their spawning runs composed the main or staple resource being utilized at this site. The fish were constantly available and could be gathered readily. This constant resource supported a regional band for a number of weeks or even some months in the spring while the group prepared for the coming summer. This is indicated by the large number of lithic artifacts, notably projectile points, that were broken during manufacture and discarded at the site. The bone artifacts provide evidence that some weir fishing with the spears used to remove the fish trapped in the weirs, was taking place. The large number of other bone tools, such as fleshers and needles, indicate that hide preparation or repair was also an important activity throughout most of the cultural levels. A spring occupation is most likely for most, if not all, of the cultural levels.

It is likely that a small regional band would be the group exploiting the Lebret site's resources. A regional band would likely gather at the site to fish and to prepare for the summer tribal bison hunts on the Grasslands.

It is also suggested that such diverse subsistence strategies, notably the use of both fish and small mammals

was far more common in regional habitats such as the Lebret site than has been previously known in the Northern Grasslands/Parkland interface. This is partly due to the historical nature of anthropological/archaeological interpretation. The adoption of an environmentally-sensitive approach to understanding the nature of regional band activity is suggested as a way of increasing our knowledge of prehistoric lifeways on the Northern Plains.

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APPENDIX I

ETHNOHISTORICAL OVERVIEW OF THE QU'APPELLE VALLEY AREA IN SOUTHERN SASKATCHEWAN

ETHNOHISTORICAL OVERVIEW OF THE QU'APPELLE VALLEY AREA IN SOUTHERN SASKATCHEWAN

Introduction

The reconstruction of the history of specific ethnic groups occupying the Qu'Appelle Valley region is particularly difficult. Written accounts by fur traders and early explorers have left only a sketchy record of southern Saskatchewan's Native inhabitants beginning around 1690 with Henry Kelsey. Russell (1982:151) notes that references to Native groups remain infrequent until after 1780. By that time several factors, such as the fur trade and population decimation by smallpox, particularly the 1781-1782 epidemic, probably had significantly affected population demographics, altering the distribution of several ethnic groups. The principal Native occupants of southern Saskatchewan prior to 1800 were the Atsina (Gros Ventre), the Hidatsa, and the southern Assiniboin (Russell 1982:170). Around 1800 or shortly thereafter, the Cree also became established in southeastern Saskatchewan perhaps occuping territory left vacant after the Assiniboin groups and Middle Missouri were decimated by smallpox in the late 1700's. No doubt, the Cree, being closely tied to the Hudson's Bay Company fur as well as being closely allied with the Assiniboin were able to extend their sphere of influence into southeastern Saskatchewan in the late 1700's and early 1800's. This chapter presents some of the records and descriptions of the five major ethnic groups: the Atsina, the Hidatsa, the

Assiniboin, the Cree, and the Bungi or Saulteaux, occupying southern Saskatchewan, in an attempt to describe the early historic occupation of southern Saskatchewan with specific reference to the Qu'Appelle Valley region.

The Atsina

The Atsina were a group of Algonquian speakers who occupied much of present-day southwestern and south-central Saskatchewan (Russell 1982:170). The Atsina were also known as the "Fall Indians" and are sometimes confused in the historic literature with the Siouian-speaking Hidatsa who have also been referred to by several of the same names by fur traders of the late 18th and early 19th Centuries. Both groups have been referred to as the Gros Ventre/Big Belly,/Fall/Rapids/Powistick (pawistik "rapids") and the Minnetares of the Missouri and Minnetares of Ft. de Prairie (Umfreville 1954:102; Henry the Younger 1965:530; Thompson 1968:327; Lewis, Vol. 1, 1961:115, cited in Russell 1982: 175). Hayden (1856) who correctly distinguishes the Atsina from the Hidatsa (Ibid.:344) claims that the Atsina were once closely allied with the Arapaho, but travelled northward at some unknown period prior to 1790 where Umfreville found them inhabiting a district on the southern branch of the Saskatchewan (Hayden 1856:543). That the Atsina were closely allied to both the Blackfoot and the Arapaho is clear in Fidler's (1967) 1800-1801 journals at Chesterfield House where the Atsina and the Blackfoot were often found together

to trade. Fidler (1967:298) also speaks of the "Tattooed Indians" or the Arapaho that accompanied the Atsina to Chesterfield House in 1801. Fidler (1967) commonly refers to the Atsina as "Fall Indians" in his Chesterfield House journals.

The confusion by some historic observers lumping the Atsina and the Hidatsa under similar names has led to controversy in the anthropological literature (e.g., Byrne 1973:548-554; Kehoe and Kehoe 1974a, 1974b) as to which group, the Hidatsa or the Atsina, were present on the Saskatchewan prairies (Russell 1982:179). Byrne (1973:552-553) feels that Umfreville, Thompson and Alexander Henry the Younger had not mistaken the ethnic identity of the "Fall Indians" in their accounts of the 17th Century and/or early 18th Century occupants of the Saskatchewan basin. Byrne (Ibid.) claims that the early chroniclers were convinced that both the Hidatsa and the Atsina occupied southern Saskatchewan and one such Hidatsa "splinter group" is responsible for the Cluny Complex and the One Gun Phase in southern Alberta. After a review of the historic evidence, both Byrne (1973) and Russell (1982) share the feeling that both the Atsina and the Hidatsa were present on the Saskatchewan prairies in the 1700's.

The Atsina, according to Hayden (1856:341), suffered badly from smallpox around 1818-1891 while staying south of the 49th parallel with the Arapaho. The loss was later

compounded by a defeat at the hands of the Crow in 1823, followed by a less severe smallpox attack in 1838 at which time they were already residing with the Blackfeet beginning shortly after 1823. Most often the Atsina are referred to as part of the Blackfeet, but undoubtedly they were a major and separate ethnic group occupying southwestern and south-central Saskatchewan prior to 1823.

The Hidatsa

The Hidatsa were a group of Siouan speakers who occupied parts of south-central-southeastern Saskatchewan during the 1600's and 1700's. Although the Hidatsa, or several Hidatsa "splinter groups" are less well documented as occupying this area and most of the historic references to "Fall Indians" in Saskatchewan refer to the Atsina (e.g., Umfreville 1790), there are references to these Siouan speakers inhabiting Saskatchewan as well. The Hidatsa groups in Saskatchewan are referred to as "splinter groups" (Byrne 1973:552; Russell 1982:180) supposedly to denote nomadic bands of Siouan speaking Hidatsa who travelled further north than their homeland along the Upper Missouri and Middle Missouri villages beginning with the Extended Middle Missouri Variant dated as early as A.D. 1100 (Lehmer 1971:100).

In 1691, Henry Kelsey travelled to the Touchwood Hills to meet a group he called the "NaywaHamee Poets". The word "poets" is likely a rendering of the Cree word pwat or "Sioux" and almost certainly would not be used to refer to

the Algonquian speaking Atsina. Since there is no evidence of other Siouan speakers auch as the Dakota in the west at this early period, it is likely that this is a reference to a Hidatsa group (Russell 1982:180).

Fairly good evidence for Middle Missouri peoples in the late 1700's to early 1800's is also provided by Fidler in 1800. On September 20, while travelling up the Saskatchewan River, he wrote:

> ...a little below this reach 3 Mud houses on this side amongst a few poplars, they are of a circular form about 9 feet diameter & 4 1/2 high, they appear to be nearly 20 years old, they are said to have been built by a small war party from the Mis sis soury river, who live in these kind of habitations (Fidler 1967: 266).

Russell (1982:181) cites this passage by Fidler as concrete evidence of Middle Missouri peoples being present in southern Saskatchewan. While it is tempting to readily accept Fidler's (1967:266) interpretation of these as Middle Missouri Village type dwellings, one has to wonder if these were indeed earth-lodge habitations. It does not seem likely that they were the result of a small and presumably highly mobile war party for the simple reason that such a party would not likely expend the time and effort to construct a single earth lodge dwelling, let alone three earth lodges. Presumably, their location and exact nature will never be known due to the flooding of the South Saskatchewan River and the creation of Lake Diefenbaker while likely obliterated these features. It may be that they were earth lodges, but

they may also have been earth mounds of some other description.

The most concrete evidence of a Hidatsa "splinter group" or other Middle Missouri related peoples occupying southern Saskatchewan will likely come as nore archaeology is done in the south central part of the province. Certain ceramics at the Lebret site do indeed bear a great similarlity to Siouan ceramics from the Middle Missouri area. While it is fairly certain that the bands of Hidatsa were present in Saskatchewan during the late 1600's and throughout the 1700's, it is not certain whether their occupation was more than on a short-term or seasonal basis. Their influence has already been noted in other Late Plains Indian period archaeological assemblages (e.g., Wettlaufer et al. 1960:105; Byrne 1973:553) from the southern prairies.

Later references in the late 1700's and throughout the 1800's suggest that the Hidatsa "splinter groups" no longer frequent the prairies of Saskatchewan except for the occasional raiding party. One reason may have been that the smallpox epidemic of 1781-1782 reduced the population of the Hidatsa considerably, and this likely curtailed their migrations into Saskatchewan.

The Assiniboin

Throughout the 1700's there is little known about the Siouian-speaking Assiniboin groups inhabiting the southern parts of Saskatchewan. Russell (1982:169) notes that:

> The Assiniboin were known to the H.B.C. (Hudson's Bay Company) men as the "Assinipoets" often abbreviated to the "Poets", the Anglicized version of their name in cree, pwat "Sioux". Despite the fact that they were trading at York Factory as early as 1684 (Radisson 1961 227) and continued to trade through the 1700's (e.g. HBCA: B.239/a/23; HBCA: B.239/a/34; Graham 1969:193), little specific knowledge of Assiniboin groups was recorded. Indeed, in the early 1760's, Andrew Graham reported that "we know little of their language" (HBCA: E.2/4 fo. 62). If any major distinction can be drawn between Assiniboin groups, it is on a general level between the southern peoples who were plains oriented and the northern population who were predominantly forest adapted.

The division between the northern forest adapted Assiniboin and the southern Plains adapted Assiniboin was recorded as early as 1697 by La Potherie (1968:264). Joseph La France describes two Assiniboin groups in western Manitoba as:

> Upon the West side of Lake Ouinipique [Lake Winnipeg] are the nation of the Assinibouels of the Meadows and further North a great Way are the Assinibouels of the Woods (La France 1749:xxi, cited in Russell 1982:171).

The Assiniboin of the "Meadows" recorded by La France are most likely those living in the Prairie/Parkland region of eastern Saskatchewan and western Manitoba. Russell (1982: 171) notes that probably the major difference between the groups is the use of canoes as a means of transportation, noting that in the historical records there are references to Assiniboin groups who are acquainted with paddling canoes and those who are not. This would suggest that one group was more at home in the northern woodlands where rivers were the

main transportation routes, while the southern groups were more at home with overland travelling employing the dog travois, and later the horse.

In 1738, La Verendrye met a party of Assiniboins around the Portage La Prairie, Manitoba area who accompanied him to the Mandan villages on the upper Missouri River. These Assiniboin had no European trade goods in their possession and still relied on a stone and bone tool technology (Burpee 1915:49). It would appear that quite early in historic times, the southern Assiniboin groups occupied much of the area in southwestern Manitoba and southeastern Saskatchewan. Their connections lay more with the Missouri villages to the south rather than the Cree and English traders to the north. This southward emphasis of Assiniboin groups remained virtually unchanged for the next 100 years. According to Ray (1974:174), the Assiniboin were still the dominant ethnic group in the Parkland-Grassland interface of southeastern Saskatchewan and southwestern Manitoba in the early 18th Century, but the Cree had began replacing the North Assiniboin on the Saskatchewan River system around 1821 (Ray 1974:182-183). The southern Assiniboin generally wintered along the lower Souris, middle Assiniboine and lower Qu'Appelle Rivers. These areas, with fairly deep valleys, provided abundant fire wood and shelter for the harsher winter months. These Assiniboin groups travelled southward across the open grasslands to the Upper Missouri River in the

summer (Ray 1974:174).

The sphere of influence held by the Assiniboin probably included the Qu'Appelle River Valley until around 1838. The boundary of the home territory was described by Maximillian in 1833 as: "between the Missouri and the Saskatchewan, bounded on the east to the Assiniboine River and on the west to Milk River" (Denig 1980:69).

The Assininboin of the area around Brandon House (H.B.C.) are described by John McDonald, Chief Factor of Brandon House in the Brandon House Report from 1822-1923 from the Upper Red River District Reports. McDonald describes several "tribes" of Assiniboins. These "tribes" are likely better described as regional bands. McDonald writes:

> The Assiniboin is the most numerous nation in this River [Assiniboine or Souris River], and perhaps, throughout the Country. They are divided into tribes as follows: each tribe having its own chief, but in very few instances they have any Control over the younger men, and where it happens they have any authority, it depends initially upon the strength of their Family Connexions (P.A.C. H.B.C.A. B 22/e/2, p. 165).

McDonald then goes on to describe the Assiniboin "tribes" residing near Brandon House in southwestern Manitoba and southeastern Saskatchewan.

> The Walking Stone Indians amount to about eighty Tents and are headed by an Indian called the Breasts, who has been recently created Chief. He has no power or authority over his Tribe whatever. His own immediate connexions are the Greatest Horse Thieves in the whole District. This Tribe generally trades at Brandon House. Their Hunting Grounds lies mostly between

this Post and the Mississouris. Their chief hunts consist of provisions, Buffaloe Robes, Wolves and Foxes.

The next tribe is the Lguashis, afrust or the Young Girls Tribe. They consist of about one hundred and forty Tents. They occupy generally, for hunting Grounds, the Spaces between the Lakes of the River Qu'Appelle and down as far nearly as Brandon House and South to the Mississouris [Missouri]. They have several who claim the title of Chief, namely the White Bull, the Red Dog, and the White Crane with several others, but none of them have any authority bay (?) and their own Families. The Produce of their hunting is the same with that of the Walking Stones.

After these comes the Tribe called Assapascan. They have about Forty Tents and are headed by a Chief called the Inow Mouth by the Indians, and by the Canadians, Le fits de gros Francois. He has rather more authority over his followers than the afore mentioned Chiefs have over theirs, being a very powerful man and able to enforce submission. Their Hunting Ground is about the Upper Lakes of the River Qu'Appelle and their hunts consist of the same articles as the Indians described above.

Menahean or He that holds the Knife heads another Tribe. About Sixty Tents follow this Chief. He is considered at this time the Chief who has the most influence amongst the Stone Indians, on account of his being a great barbarian, and generally very successful against his enemies. He is a sensible Indian, but very expensive to posts, and Selfish. His Hunting Grounds, when he is at home, for he is a great traveller, and goes far to show himself after he has made a coups, is between the Upper lakes of the River Qu'Appelle and the Mississouris. They bring to trade Dressed Leather, Buffaloe Robes, Wolves, Foxes and provisions.

Another Tribe is led by Stringwad (?) Skin or Lonely Dog. This tribe consists of about fifty Tents. He occupies the same Ground as the last mentioned tribe. These three last tribes with several others of less note are generally called the Flying Indians, as they run backward and forward between the South Branch of the Sascathewan, the Upper Lakes

of the River Qu'Appelle and the Mississouris.

> The whole of the Tribes of the Assiniboin in this District may form about four hundred or four hundred and fifty Tents, and each Tent may be supposed to contain Seven Souls, of whom we may reckon there is per Tent able to bear arms, which will make altogether Thirteen Hundred Warriors. Before the measles got into the Country in the years 1819/20 all these Tribes were much more numerous (P.A.C. H.B.C.A. Brandon House District Report 1822-1823 B. 22/e/2, pp. 165-166).

McDonald has described the Assiniboin "tribes" in a way that makes it likely that he is actually describing groups at the socio-cultural level of the regional band.

Perhaps the most significant events in the history of the Assiniboins were their long history of trading with the more southern upper Missouri peoples and, as a direct result, the smallpox epidemic of 1837-1838. As mentioned earlier, the Assiniboins that La Verendrye encountered were making an overland summer expedition to the Mandan villages on the Upper Missouri. The north-south trade continued into the late 1700's, as fur trader John Macdonell stationed at Fort Esperance on the Qu'Appelle River near its confluence with the Assiniboine River in the mid-1790's reported an expedition of traders visiting the Mandan villages through December to February in 1794 (Wood 1984:89, 96). It is unclear which Indians accompanied the traders as guides or hunters in their trek to the Mandan villages, but it is clear that an established trade route existed and likely it was a route frequently used by the Assiniboin as they were the most

frequent visitors to Fort Esperance at this time. In all likelihood, it was at least in part the same route travelled by La Venrendrye's Assiniboin group some fifty-odd years before.

The southern Assiniboin groups, more accustomed to the southern grassland area for trade and bison hunting, found a market for bison robes with the American traders that the more northern-based Hudson's Bay Company could not compete with due to the logistics of overland travel to their riverine located trading posts, as well as the relative abundance of bison in the Upper Missouri area compared to the eastern Red River area in the early 1800's (Ray 1974:177). In 1838, Governor Simpson of the Hudson's Bay Company acknowledged that his company had lost much of its trade with both the Assiniboin and the Plains Cree to the southern American traders, but that to compete by building trading posts in southern Saskatchewan and Alberta would be too expensive (Ray 1974:182-183). The consequence was that it was mainly Cree groups who gradually moved into the territory formerly occupied by the northern Assiniboin groups along the Saskatchewan Rivers that were trading with the Hudson's Bay Company posts, while the more grassland-oriented Assinboin were trading with the Americans in the 1830's.

When the smallpox epidemic broke out in the late summer of 1837 along the Upper Missouri and then diffused northward into southern and middle Saskatchewan carried by Indians

attempting to escape the disease, those groups that were hit the hardest and suffered the most serious losses were the southern groups such as the Blood, Sarsi, Piegan, Blackfoot and Assiniboin (Ray 1974:188). The Cree, however, that had been trading with the H.B.C. posts were largely spared due to the efforts of the H.B.C. traders. Ray (1974) provides a good descriptive account of the conditions under which the Cree escaped the smallpox epidemic of 1837-1838:

> The Cree of Saskatchewan...were largely spared through the efforts of the Hudson's Bay Company men resident there - particularly those of William Todd, who was stationed at Fort Pelly. Todd appears to have been the first of the company men to have learned of the outbreak of smallpox. On 20 September, three Cree from the forks of the Qu'Appelle River arrived at the post and, according to Todd, `they report that some bad disease has got into the American Fort (Fort Union located at the confluence of the Yellowstone and Missouri Rivers) in Consequence of which their gates are kept constantly Shut and no Indian Allowed to enter.' Although he was not sure what the disease was, Todd suspected it was smallpox and began to take immediate action. The next day, 21 September, he wrote that he `had all the Indians now here Enter'd in...a full explanation with them respecting the reports brought yesterday of the disease at the American establishment which I pointed out to them was likely to be the Small Pox, and the danger they incurred if it once got among them [.] [I] proposed Vaccination as the only prevention to this...They at once agreed, and I immediately Commenced and Vaccinated Sixty persons including Men Women and Children.' Thus before smallpox had been confirmed, Todd began what seems to have been the first massive vaccination campaign among the Indians of Western Canada in the hopes of arresting the progress of the epidemic (Ray 1974:188-

189).

Todd's efforts were expanded to other fur trade posts in the Saskatchewan and Edmonton districts. As a result, the disease was fairly well contained to the southern grasslands area. Many of the Plains Cree and nearly all of the Parkland/Woodland populations were spared (Ray 1974:190). The Assiniboin, however, were less fortunate. On the 25th of January, 1838, after receiving some correspondence from Beaver Creek on the Assiniboin just south of the confluence between the Qu'Appelle and Assiniboine Rivers, William Todd wrote:

> ...Mortality among the Plains tribes from Small Pox has been very great, but principally confined to the Assiniboins who keep to the southern'd and in general traded with the Americans, about 200 tents have traded this year at Beaver Creek got vaccinated and have so far escaped and these are nearly all that remain of that once Numerous tribe (P.A.C. H.B.C.A. B. 159/a/17, p. 13, cited in Ray 1974:191).

This devastating epidemic considerably reduced the Assiniboin's influence in their former territory. According to Denig (1980:72), the Assiniboin nation was reduced to less than half of their former numbers by the spring of 1838. The Cree continued to expand their territory southward after the 1838 epidemic into the Parklands and Grasslands into areas formerly occupied by the Assiniboin and the remaining Assiniboin occupied the territory further to the south (Ray 1974:191). By the mid-1800's, the Assiniboin no longer occupied the Qu'Appelle River Valley. The Assiniboin

territory at this time is reported to have been the area between the Cypress Hills and the Souris River on the north and the Missouri and Milk Rivers on the south. At this time roughly 75% of the remaining Assiniboin groups resided in the territory south of the international border, while the remainder only occupied southern Saskatchewan as far north as the Moose Mountain area (Ray 1974:183).

The Plains Cree

The Plains Cree were the last major inhabitants of the Qu'Appelle River Valley prior to settlement in the late 1800's and early 1900's. The Plains Cree are recognized as a sociocultural group with a large presence on the northwestern Plains in the early to middle 1800's. Their occupation of the area was largely a result of several historical factors, most notably the fur trade and the events corresponding to the smallpox epidemic of 1838.

As mentioned previously, the Assiniboin were the dominant ethnic group in the Grasslands and southern Parklands of southern Saskatchewan during the early 1800's. However, at this time, and even earlier, there are references to several Cree groups inhabiting the Parklands proper and some of the more northern areas also occupied by the Assiniboin. These Cree groups or regional bands made up the Parkland Cree (Russell 1982). The Parkland Cree consisted of four of five regional bands occupying the Parkland area from Dauphin to just west of the Alberta-Saskatchewan border

(Russell 1982:187), and are important here because these groups gave rise to the Plains Cree of the 1800's (Ibid.: 210).

Russell (1982:198) and Meyer (1982:235) note that based on recorded subsistence activities and seasonal rounds, the Parkland and Southern Forest edge Cree bands exploited the Grasslands for bison on a seasonal basis. They (Russell 1982:209; Meyer 1981) also note that the Parkland Cree have inhabited the Parkland-Southern Forest edge from the late 1600's to the early 1700's based on historical documentation and were very likely present in this area as early as the 1400's based on the archaeological evidence available.

If the Parkland Cree, made up of several regional bands, had a long history of occupation in the Parkland area and presumably seasonal exploitation of the adjacent Grasslands, it can easily be seen why they were the most likely candidates to inhabit the Parklands-Grassland interface of southeastern Saskatchewan during the mid-1800's. In 1793, Cree groups are mentioned, albeit with relative infrequency, at Fort Esperance on the Qu'Appelle River above its confluence with the Assiniboine River (Wood 1984:84). Similarly, at Brandon House in southwestern Manitoba John McDonald, the Chief Factor, writes in his Report for the year of June 1, 1822 to June 1, 1823:

> With regard to the plains Indians, it hardly possible to give any concrete Statement of them, as they are of such a wandering nature, following the

> cattle [bison] wherever they go and trading at the post nearest to which they may find themselves. Those of this District who may be classified under this head, are the Assiniboins and Crees of the plains. These latter follow exactly the same manner of Life as the Stones (Assiniboins) (P.A.C. H.B.C.A. B 22/e/2, p. 165, inclusions mine).

McDonald goes on to further describe the similarlity of the Plains Cree to the Assiniboin. He suggests, however, that the Crees have adopted the Assiniboin lifestyle only recently, and as a direct result of the depletion of fur-bearing animals in the more northern Swan River district or Dauphin area:

> Of late years these Indians [the Assiniboin] as well as the Crees wage a continual war against the tribes of the Mississouri, which proves very injurious to the Trade of the District, as they cannot with Safety hunt on the Lands between the Red River and the Mississouris Without being subject to the attacks of their Enemies.
>
> There are about forty Tents of Crees who trade at Brandon House. These Indians follow nearly the same mode of life as the Assiniboin of late years, since the Country has been exhausted of Fur Animals. They kill a few vears & trap a few Fishers and Foxes in the winter, but in the summer they reep the plains.
>
> The Crees who generally trade at Beaver Creek amounts to about fifteen Tents. They are in every respect like the Crees attached to Brandon House. There are also Seventy five Tents of Crees who hunt mostly at the Beaver and Touchwood Hills and bordering upon the Strong Woods of the Nut Hills. The greatest part of these generally traded at the Upper House, called Alexandria, fitted out from Swan River. They also trade at Carleton House in the Saskatchewan District, and sometimes they come to Beaver Creek.

> The whole of the Crees before mentioned lived formerly on the Strong Woods, and made good hunts while the Country was rich in Furs, but since it has been exhausted they have gradually left their own Land and emigrated to the Westward, as most Indians do. Their original Lands were the borders of the Lake Winepeg and Lake of the Woods. They were considered formerly to be the best Warriors of all the Indian Tribes of this Country. They have no Chief as any authority; their power extends no further than their own Families. They are exceedingly fond of Liquor, are great Smokers, and their Young Men are much given to horse-thieving. They also indulge in a plurality of Wives. But they do not, like the Assiniboins, risk them at play. They treat them with more respect and decency than the others do. They are nevertheless great Gamblers. (P.A.C. H.B.C.A. Brandon House District Report B. 22/e/2 1822-23, pp. 166-167).

This fairly general report of the Cree by Chief Factor John McDonald offers some insight into the demographics of the Cree on the Plains of southwestern Manitoba and southeastern Saskatchewan in the early 1800's. It would appear, that although the Assiniboins were the most numerous, some Cree bands were also present and pursuing a Plains lifestyle similar to that of the Assiniboin. They were apparently heavily dependent on the bison and followed a fairly nomadic lifestyle. The Cree and the Assiniboin also shared a common enemy in the Missouri peoples. Most likely this is a reference to the Atsina with whom the Assiniboin were said to be constantly at war (Fidler 1967:295-296) rather than the Missouri village tribes such as the Mandan. The description also lends the impression that the Cree presence in the more southern areas had occurred only lately,

giving depleted fur-bearing animal populations in the Northern Parkland-southern Forest edge as the primary reason. The Cree young men, apt to be more adventurous, also engaged in capturing horses and other pastimes quite similar to the Assiniboin.

The move, then, of some of the Parkland Cree onto the Plains probably began in the late 1700's and continued through the early 1800's, although it is clear that McDonald's description also mentions the Parkland Cree. By the time the smallpox epidemic of 1838 occurred, the Assiniboin populations were devastated, with at least one generation or perhaps even two generations of Parkland Crees habitually inhabiting the Plains in much the same fashion as the Assiniboin. However,the presence of Parkland Cree peoples visiting and exploiting the Plains seasonally from the Parklands probably goes back at least some 300 years prior to the late 1700's. Factors such as the Hudson's Bay Company and the Northwest Company fur trade depleting fur-bearing animals in the Parklands, the bison robe trade of the Assiniboins with the Americans, and eventually the smallpox epidemic of 1838 enabled the acceleration of the phenomenon known as the Plains Cree into the more southern areas of Saskatchewan including the Qu'Appelle River Valley area, but likely, as Russell (1982:210) notes, the Plains Cree became a major presence in the mid-1800's, but this process had begun somewhat earlier and was aided by these historical factors.

Only after the Assiniboin had been greatly reduced in number after 1838 was this population expansion by the Parkland Cree noticeable in the population demographics shifting from an Assiniboin presence to a Cree presence on the northern plains of southern Saskatchewan.

Likely a number of Plains Cree also suffered with the Assiniboin during the smallpox epidemic of 1838. However, those Plains Cree that survived undoubtedly had relatives among the protected Parkland Cree who would be familiar with a Plains lifestyle, and the occupation of the Saskatchewan Plains was likely the result of these kinship ties being utilized and networks expanded until, in a very short time, the Cree replaced the Assiniboin as the dominant ethnic group in this area.

The historical accounts of the mid-1800's consistently mention the Plains Cree as the inhabitants of the Qu'Appelle River Valley. The area of the Qu'Appelle Lakes, or specifically the Fishing Lakes were, at least in the winter months, the home of the Plains Cree. In 1852, the Reverend C. Hillyer of the Church Missionary Society (Anglican) passed the winter at Fort Pelly (H.B.C.) in southeastern Saskatchewan, but spent part of the fall at the Qu'Appelle Lakes where he observed that "in this valley a large body of Crees always winter and it is called by them their house" (S.A.B. #S-B81, P.A.C., Reel No. A.88, C.M.S. Series c 1/0).

Mandelbaum, in his 1940 study of the Plains Cree, noted

that just prior to the disappearance of the bison in southern Saskatchewan around 1880, the Plains Cree inhabited an area,

> ...across the present provinces of Saskatchewan and Alberta from the region where the Qu'Appelle River crosses the Manitoba line to the vicinity of Edmonton. The various bands of Plains Cree centred in the river basins included in this area and the tribal range may be defined in terms of the valleys of the Qu'Appelle, the lower North Saskatchewan, the lower South Saskatchewan, and the lower Battle Rivers (Mandelbaum 1979:7).

In this area, Mandelbaum (1979:9) notes that there were eight "major divisions" of the Plains cree peoples in the 1800's. Mandelbaum's (Ibid.) description is fairly vague, but clearly these divisions represent regional bands of Plains Cree. The four groups most pertinent to this study are described as follows:

> The easternmost groups were the Calling River People Katcpwewcipi-wiyiniwak, and the Rabbit Skin People, wapucwayanak. The latter hunted in the wooded country between the Assiniboine and Qu'Appelle rivers and were closely attached to their eastern neighbours, the Plains Ojibwa. The Calling River People roamed up and down the valley of the Qu'Appelle. In later years they expanded their territory to the south and southwest of that river... A band known as the nehiopwat, "Cree-Assiniboin", was so-called because of its close relations and frequent intermarriage with the Assiniboin. They occupied the area southwest of the Qu'Appelle River, in the vicinity of Wood Mountain. Of all the Cree groups, this band was deepest into the true Plains...A small group called the Touchwood Hills people, pusakawatciwiyiniwak, occupied the territory between Long Lake [Last Mountain Lake] and the Touchwood Hills (Mandelbaum 1979:9-10).

The territories and bands described by Mandelbaum (1979:9-10) relate to the period between 1860 and 1870. Clearly, however, the Plains Cree were in place on the Saskatchewan Plains some ten to twenty years prior to this period, and likely were habitually utilizing much of this area in the company of the Assiniboin at least by the 1820's and perhaps a bit earlier.

It is difficult to distinguish between the Plains Cree and the Parkland Cree during the first half of the 1800's. Clearly, the number of Cree pursuing a nomadic Plains lifestyle is in the minority compared to the number of Assiniboin during the early 1800's. Therefore, there are few references to the Cree at all on the Plains prior to 1850, and because many fur traders did not distinguish between regional bands of Cree, simply choosing to call them all "Cree", it is impossible to determine if these are actually Plains Cree bands or Parkland Cree bands who were known to utilize the Parkland-Grassland interface at least occasionally. This is further complicated by the fact that likely the Parkland Cree gave rise to the Plains Cree. To be able to distinguish between Plains Cree and Parkland Cree becomes, then, a matter of degree. The distinction of Plains Cree is generally based on location and proximity to the Grasslands proper and participation in a "typical" Northern Plains bison hunting lifestyle. Essentially this is a distinction based on the similarity of the Plains Cree

culture traits with the principle culture traits characterizing typical Plains tribes described by Wissler (1950:222). One of the most typical of these tribes was the Assiniboin (Ibid.:220). Not surprisingly, those Cree most closely associated with the Assiniboin are regarded by Mandelbaum (1979:9-10) as the band "deepest in the Plains".

Defining culture traits for culture areas served and continues to serve a useful purpose in anthropology. However, it is clear that some flexibility must be obtained to properly understand the cultural dynamics of the Plains Cree in relation to both the Assiniboin and their relatives, the Parkland Cree. It is not possible to clearly delineate the Cree into Plains Cree or Parkland Cree without some prior knowledge of their characteristic traits, and also some knowledge of historical events such as disease and the effects of the fur trade, as well as good locational and seasonal data for each group. Nor is it possible to separate the two groups based on their close or not so close proximity to the Assiniboin simply because the southern Assiniboin represent a well established "typical" Plains culture area lifestyle. The nature of these associations must be clarified before one can attempt to create a category of Plains Cree proper.

As was previously mentioned, it is a metter of degree, and for classificatory purposes this is fairly easily accomplished with a mathematical formulation of "positive and

negative culture traits". This, however, provides little real understanding of the history of the Plains Cree regional bands in relation to both the Parkland Cree or the Assiniboin. It does, however, allow insights into the history of the regional Cree bands inhabiting the Northern Plains/Parklands. Very likely some Parkland Cree bands were utilizing the Grasslands seasonally as described by Russell (1982:194) for as long as they were residents of the Northern Parklands and Southern Forest edge. Archaeologically this can be shown to go back to around 1400 A.D. (Meyer 1981). It can also be shown historically that the Cree were in the southern areas of southwestern Manitoba in the 1820's, by which time they were pursuing a lifestyle very similar to the Assiniboin (P.A.C. H.B.C.A. B 22/e/2). Also, it can be shown that the Cree were the dominant ethnic group in the Saskatchewan Grasslands and Parklands after the small pox epidemic of 1838.

The question is not where the Cree were, but what were the cultural dynamics in which the Cree were involved and how do these relate to the regional Cree bands of 1860-1870 as reported by Mandelbaum. The idea of the Plains Cree as a homogeneous ethnic group is merely one of convenience and is quite arbitrary. More likely, some Cree bands, such as the Cree-Assiniboin, were closely tied to a typical bison-oriented lifestyle centred on the Grasslands while others, such as the Calling River and Touchwood Hills people were

utilizing both the Grassland and the Valley complexes in these areas. Still others, like the Rabbitskin people were closer to the Parklands and Southern Forest edge in their "exploitative zones". These exploitative zones, based primarily on a subsistence base, may also be extended to include a kinship networking zone in which these regional bands may exploit either real or fictive kinship ties, or alliances based on common goals such as raiding or warfare.

It seems likely that the Parkland Cree had some such associations with their southern neighbours the Assiniboin as they seasonally exploited some of the same territories. With the advent of the fur trade and other European influences likely some of the more southern Parkland Cree were drawn southward at first to accompany, and then to replace the Assiniboin as the latter's numbers decreased due to small pox. Rather than a large body of Cree as a whole taking over the Plains and becoming the Plains Cree, it is more likely that they, in several regional bands, networked their way south and through a number of historical instances became the dominant ethnic group of the Northern Plains in Saskatchewan by the mid-1800's.

The Bungi, the Saulteaux, or the Ojibway

The Saulteaux or Bungi, or Northern Ojibwa, began expanding westward from the Lake Superior region in the late 1600's and early 1700's (Bishop 1974:345) in an attempt to maintain a lucrative middleman status with western tribes.

By the early 1800's, this group was present in the Red River Valley, southwestern Manitoba, and eastern Saskatchewan. In John McDonald's 1822-1823 Brandon House District Report, he noted that:

> There are a few Sautaux who trade in this District. These amount to ten Tents. They trade at Brandon House and sometimes at Fort Dauphin. They are good hunters, but the Country is too poor for them to make considerable hunts...They are more independent in Spirit than the Crees and the Assiniboins, and not at all given to thieving like those two nations. They generally join the Crees in their war parties (P.A.C. H.B.C.A. B.22/ e/2, p. 167).

During their expansion the Saulteaux occasionally raided the Atsina, the Cheyenne and the Hidatsa, and it is not surprising that besides accompanying the Cree, they also were usually on friendly terms with the Assiniboin. By the 18930's, after receiving horses from the Cree and Assiniboin, they were fully adapted to Plains life (Howard 1977:13-21, in Hanna 1983). They Saulteaux were never the major ethnic group on the Plains of southeastern Saskatchewan and southwestern Manitoba. Ray (1974:110-111) estimates that, in the early 1800's, there were probably no more than 1,400 Saulteaux in Saskatchewan and Manitoba combined. Several Saulteaux are noted in the Qu'Appelle Valley area of the Fishing Lakes and to the northeast around Fort Pelly in the mid-1800's by Missionaries, but they never were as numerous as the Cree and Assiniboin groups present in the area (P.A.C. Reel No. A88 C.M.S. Series c 1/0).

Summary

The major ethnic groups inhabiting southern Saskatchewan and the Qu'Appelle River Valley changed over time largely as a result of influential factors brought about by the fur trade and disease. Although there is only scanty information relating to the very earliest historically recorded groups, and, therefore, little about the actual makeup and exploitation habits of these early groups, later information may allow some conclusions to be drawn about the lifeways of the Native inhabitants of southern Saskatchewan from the late 1600's to the mid to late 1800's.

The very earliest inhabitants were likely the Atsina in the southwest and perhaps sporadically the Hidatsa in the south-central areas of Saskatchewan. Little is known about the actual makeup of these two ethnic groups, except that the Atsina, who later became part of the Blackfoot Nation may have represented one or more regional bands. Indeed, reports by Hayden (1856:343) of their split from, but continued association with, the Arapaho make this appear likely. Less is known about the Hidatsa ethnic group, and it is supposed that their reported presence may also relate to the seasonal occupation of south-central Saskatchewan by a regional Hidatsa band.

During the late 1700's until 1838, it is clear that the southern Assiniboins were the dominant ethnic group in south-central and southeastern Saskatchewan. It is also with the

Assiniboins that we have the first glimpse of social organization of a particular ethnic group in this area. John McDonald's accounts of the Assiniboin "Tribes" may be taken as a brief description of several political units or regional bands within the larger ethnic group. These regional bands, described first for the Assiniboin during the height of their influence, and then later for the Plains Cree by Mandelbaum should reveal a great deal about the prehistoric utilization of the Qu'Appelle River Valley by regional bands in the vicinity of the Fishing Lakes.

Although a variety of factors, already mentioned, were at work during the historic period in southern Saskatchewan making it extremely difficult to assign ethnic associations to archaeological materials through a direct historical approach, the information provided about the regional bands inhabiting the area during the historic period may provide a framework for the way the Lebret materials may be interpreted in the context of the larger Northern Plains culture area.

APPENDIX II

COMMON AND SCIENTIFIC NAMES OF PLANTS MENTIONED IN THE TEXT, IN ORDER OF OCCURRENCE

COMMON AND SCIENTIFIC NAMES OF PLANT SPECIES MENTIONED IN THE TEXT, IN ORDER OF OCCURRENCE

GRASSES:

spear grasses	Stipa comata Stipa spartea
wheat grasses	Agropyron dasystachyum Agropyron smithii
June grass	Koeleria cristata
low blue gramma grass	Bouteloua gracilis
thread-leaved sedge	Carex filifolia
cattail	Typha latifolia
bullrush	Scirpus acutus

SHRUBS:

western snowberry	Symphoricarpos occidentalis
wolf willow	Elaeagnus commutata
saskatoon	Almelanchier alnifolia
chokecherry	Prunus virginiana
pincherry	Prunus pensylvanica
hawthorn	Cratagus sp.
buffalo berry	Shepherdia argentea
rose	rosa sp.
many-spined Opuntia	Opuntia polyacantha
Red-osier dogwood	Cornus stolonifer
willow	Salix sp.
wormwood	Artemisia

TREES:

aspen poplar	Populus tremuloides
Manitoba maple	Acer negundo

green ash — *Fraxinus pennsylvanicus*

American elm — *Ulmus americana*

(After *Budd's Flora of the Canadian Prairie Provinces*, J. Looman and K.F. Best. 1979. Research Branch, Agriculture Canada, Publication 1662.)

APPENDIX III

TERRESTRIAL, AQUATIC AND AVIAN FAUNA OF THE LEBRET SITE

TERRESTRIAL MAMMAL AND BIRD SPECIES PRESENT IN THE LEBRET SITE REGION

MAMMALS:

mountain lion	Felix concolor
bison	Bison bison
mule deer	Odocoileus hemionus
pronghorn antelope	Antilocapra americana
badger	Taxidea taxus
bobcat	Lynx rufus
coyote	Lynx canadensis
swift fox	Vulpes velox
black bear	Ursus americanus
snowshoe rabbit	Lepus americanus
white-tailed jack rabbit	Lepus townsendii
striped skunk	Mephitis mephitis
mink	Mustela vision
least weasel	Mustela rixosa
long-tailed weasel	Mustela frenata
racoon	Procyon lotor
woodchuck	Marmota morox
Richardson's ground squirrel	Spermophilus richardsonii
thirteen-lined ground squirrel	Spermophilus franklini
gray squirrel	Sciurus carolinensis
red squirrel	Tamaisciurus hudsoniscus

pocket gophers	Geomyidae fm.

(After Mammals in Saskatchewan, D.A. Baerreis, 1969, In Atlas of Saskatchewan, J.H. Richards and K.I. Fung (Editors). Modern Press, Saskatoon).

UPLAND BIRDS:

ruffed grouse	Bonasa umbellus
sharp-tailed grouse	Pedioecetus phasionellus
ring-necked grouse	Aythya collaris

(After, The Birds of Canada, W.E. Godfrey. 1966. National Museum of Canada, Bulletin #203, Biological Series #73, Ottawa).

AQUATIC MAMMAL, FISH AND BIRD SPECIES PRESENT IN THE LEBRET SITE REGION

MAMMALS:

mink	Mustela vision
muskrat	Ondatra zibethicus
beaver	Castor canadensis

(After Mammals in Saskatchewan, D.A. Baerreis, 1969, In Atlas of Saskatchewan, J.H. Richards and K.I. Fung (Editors). Modern Press, Saskatoon).

MIGRATORY WATERFOWL:

mallard duck	Anas platyrhynchos
pintail duck	Anas acuta
lesser scaup	Atythya affinis
green winged teal	Anas carolinensis
American widegeon or baldpate	Mareca americana

American coot	Fulica americans
shoveler	Spatula clypeata
blue-winged teal	Anas discors
canvasback	Aythya valisineria
redhead	Aythya americana
Canada goose	Branta canadensis
bufflehead	Bucephala albeola
whistling swan	Olor columbianus

(After The Birds of Canada, W.E. Godfrey. 1966. National Museum of Canada, Bulletin #203, Biological Series #73, Ottawa).

FISH:

northern pike or jackfish	Esox lucius
yellow perch	Perca flavescens
walleye or yellow pickerel	Stizostedion vitreum
sauger	Stizostedion canadense
silver redhorse	Moxostoma anisurum
shorthead redhorse	Moxostoma macrolepidotum
bigmouth buffalo	Ictiobus cyprinellus
longnose sucker	Castostomus castostomus
white sucker	Castostomus commersoni
brown bullhead	Ictalurus nebulosus
black bullhead	Ictalurus melas
goldeye	Hiodon alosoides
lake whitefish	Coregonus clupeaformis
tullibee	Coregonus artedii

burbot — Lota lota

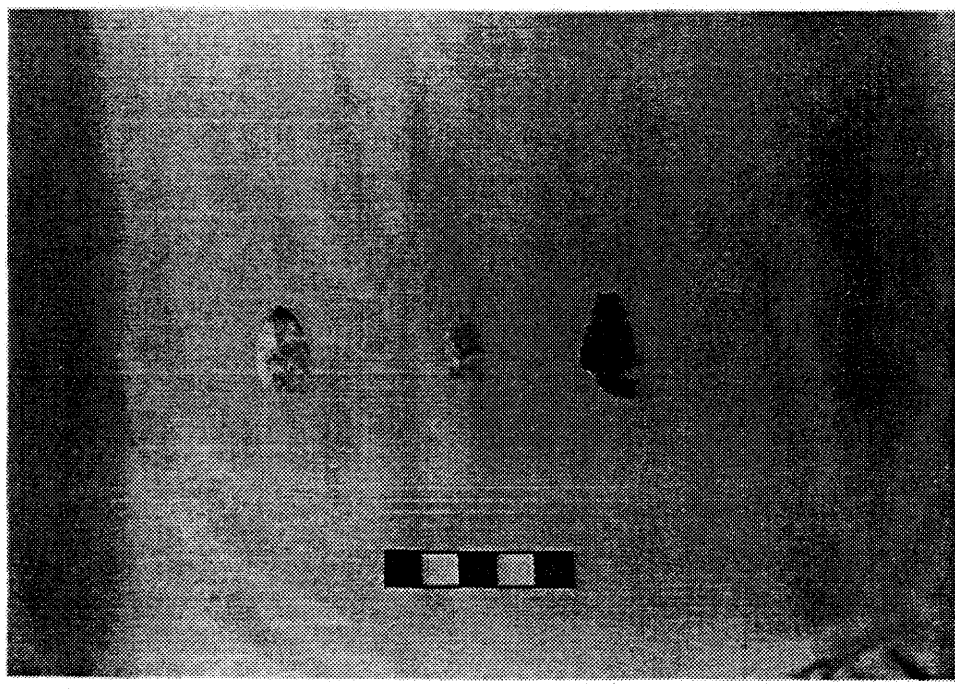
SHELLFISH:

freshwater clam — Pelecypoda (Class)

(After, Freshwater Fisheries of Canada, W.B. Scott and E.J. Crossman. 1973. Bulletin 184, Fisheries Research Board, Ottawa).

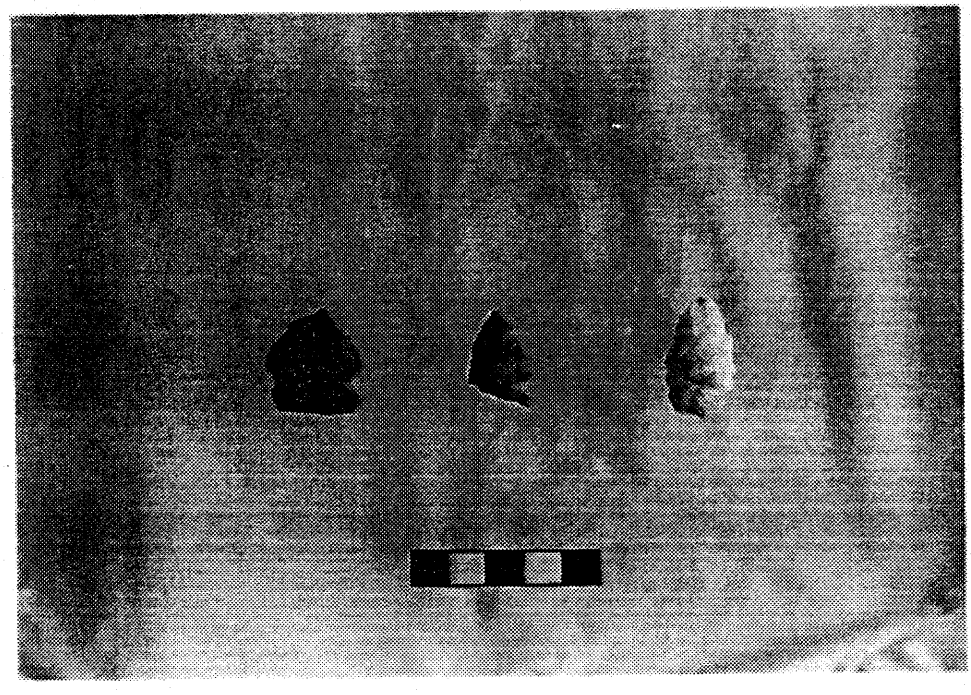
APPENDIX IV

LITHIC ARTIFACT PLATES



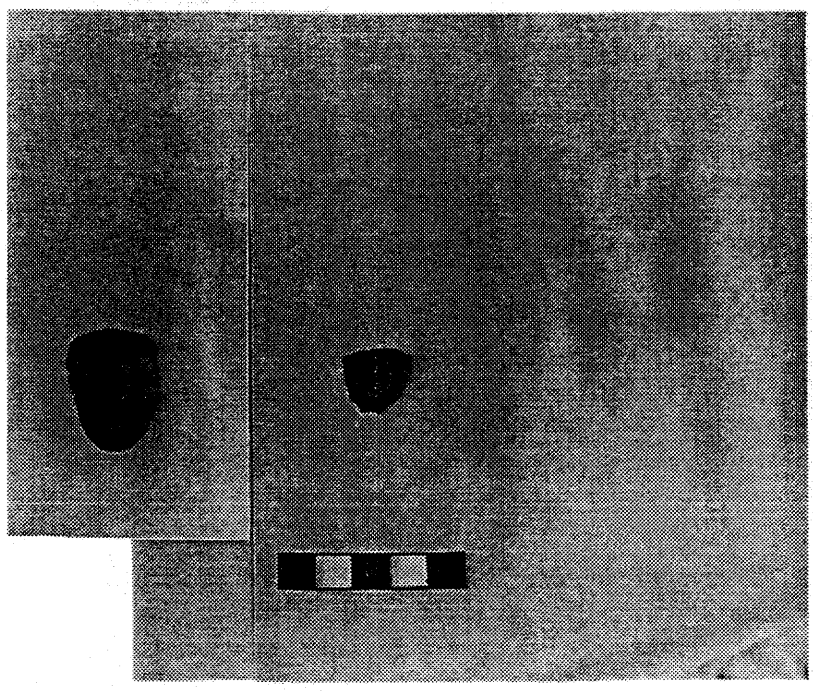
Projectile Points: Late Prairie or Plains Side-Notched. Specimen Nos. (Left to Right) S-3-45, B-S-1; Fall River Plains Side-Notched S-6-9.

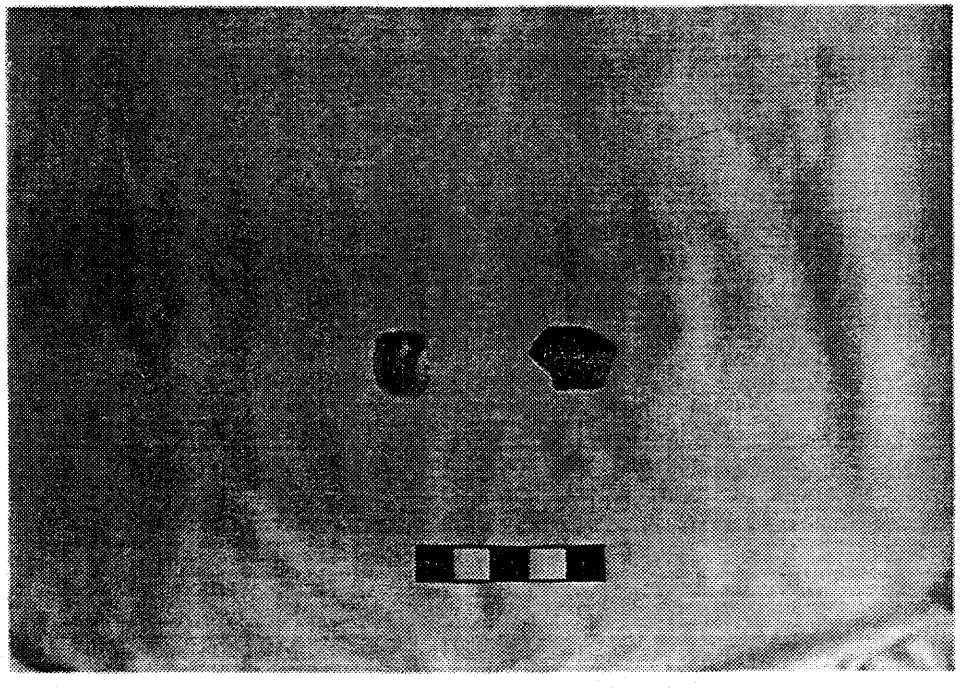
Scale = 5 cm



Projectile Points: Late Prairie or Plains Side-Notched. Specimen Nos. (Left to Right) A-1-14, T19-14, A-4-1.

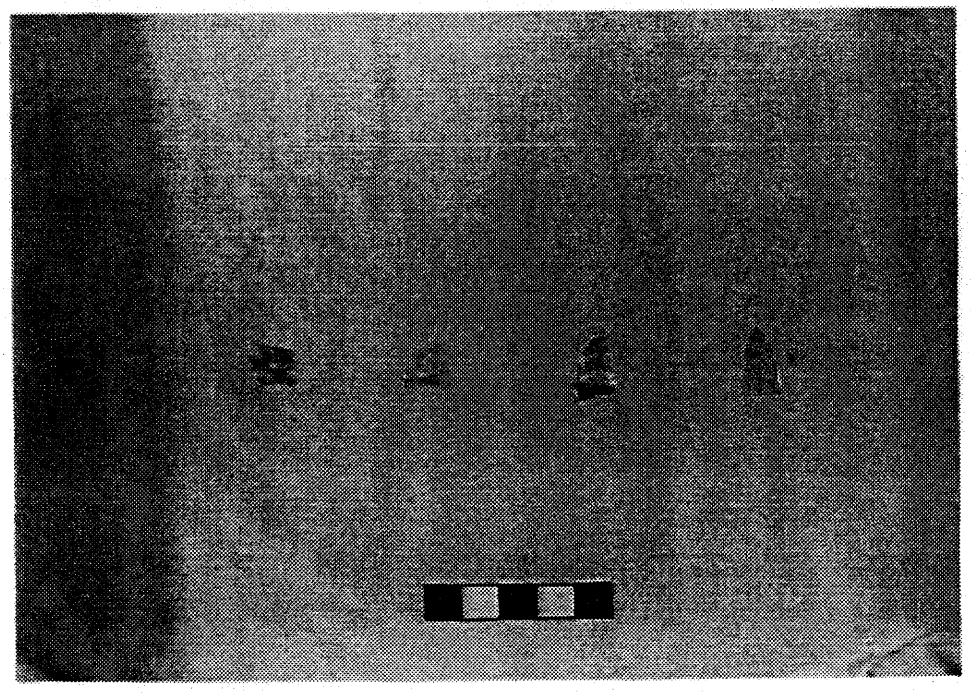
Scale = 5 cm

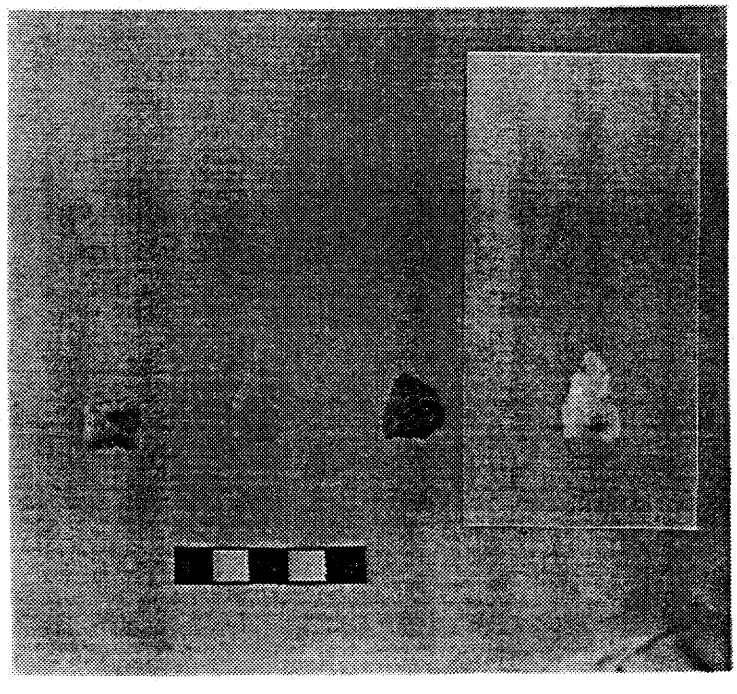




Late Prairie or Plains Side-Notched Endscapers:
Top: Specimen Nos. (Left to Right) S-1-29, A-3-6.
Lower: Specimen Nos. (Left to Right) 4S-16W-1, 3S-17W-1.

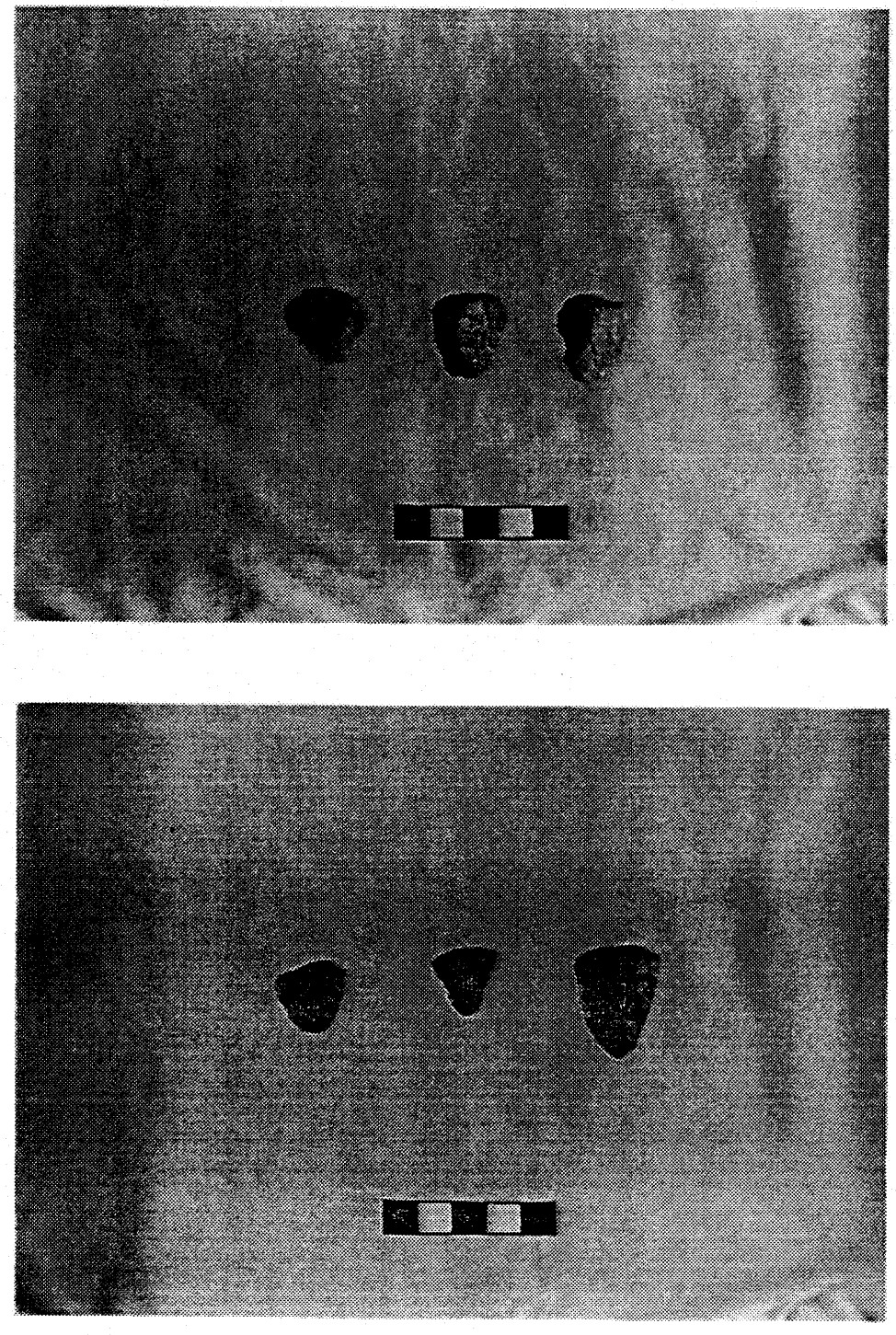
Scale = 5 cm





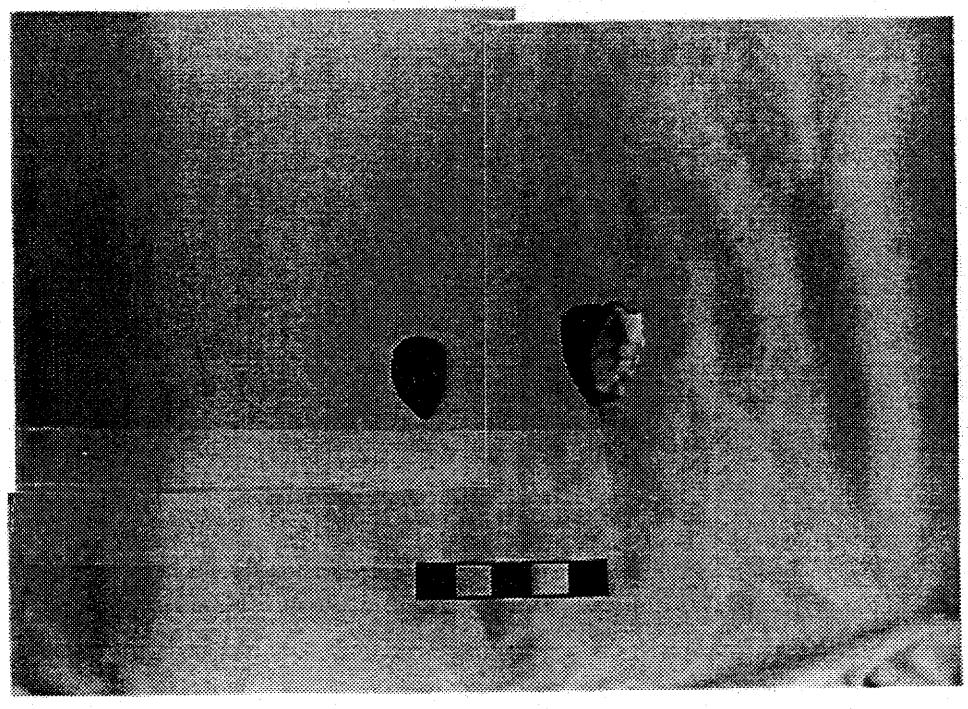
Avonlea Complex Projectile Points:
Top: Specimen Nos. (Left to Right) A-4-29, A-3-17, A-6-75, A-2-1.
Lower: Specimen Nos. (Left to Right) 9S-14W-25, 0N-16W-22, 0N-18W-23, A-5-52.

Scale = 5 cm



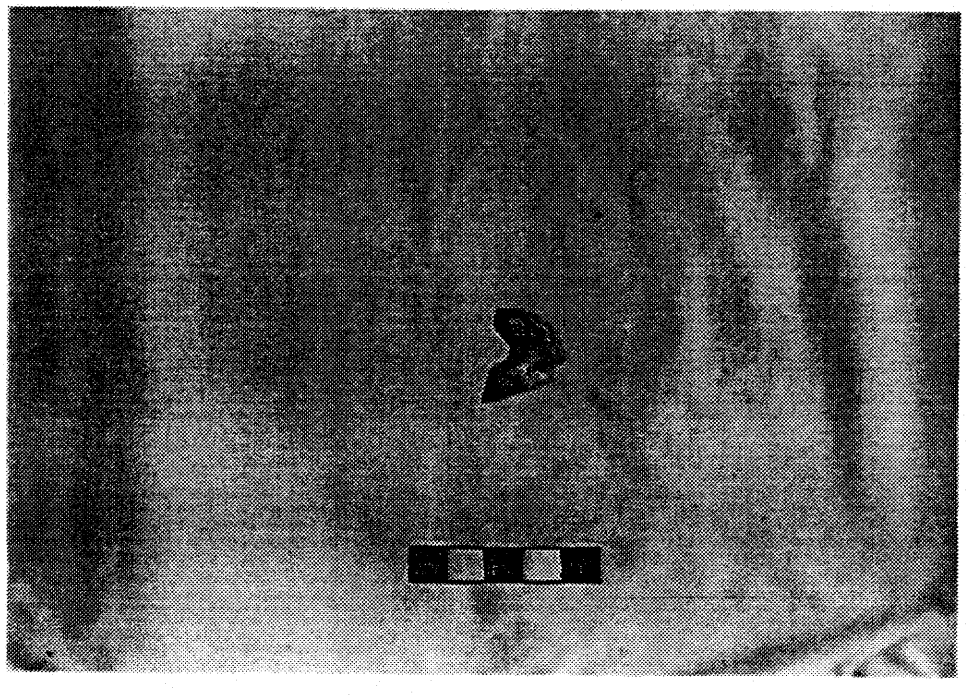
Avonlea Complex Endscrapers:
Top: Specimen Nos. (Left to Right) A-4-28, A-2-22, A-1-34.
Lower: Specimen Nos. (Left to Right) A-8-20, 5S 13W-4, ON 16W-21.

Scale = 5 cm



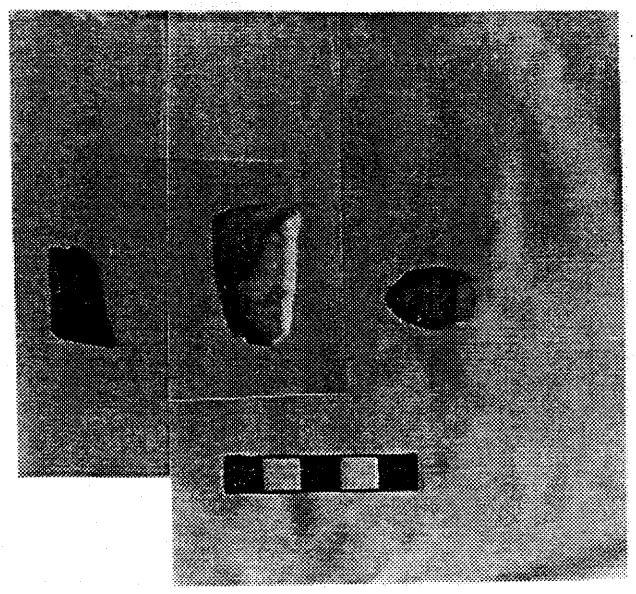
Avonlea Complex Endscrapers: Specimen Nos. (Left to Right) S-3-53, 5S 15W-20.

Scale = 5 cm



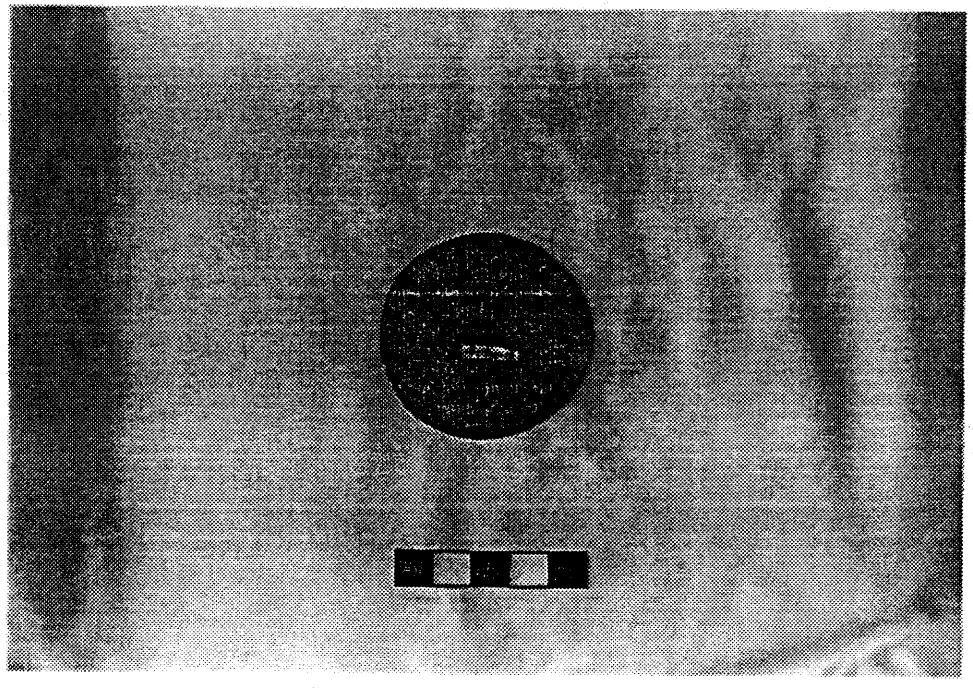
Avonlea Complex Spokeshave: Specimen No. A-5-26.

Scale = 5 cm



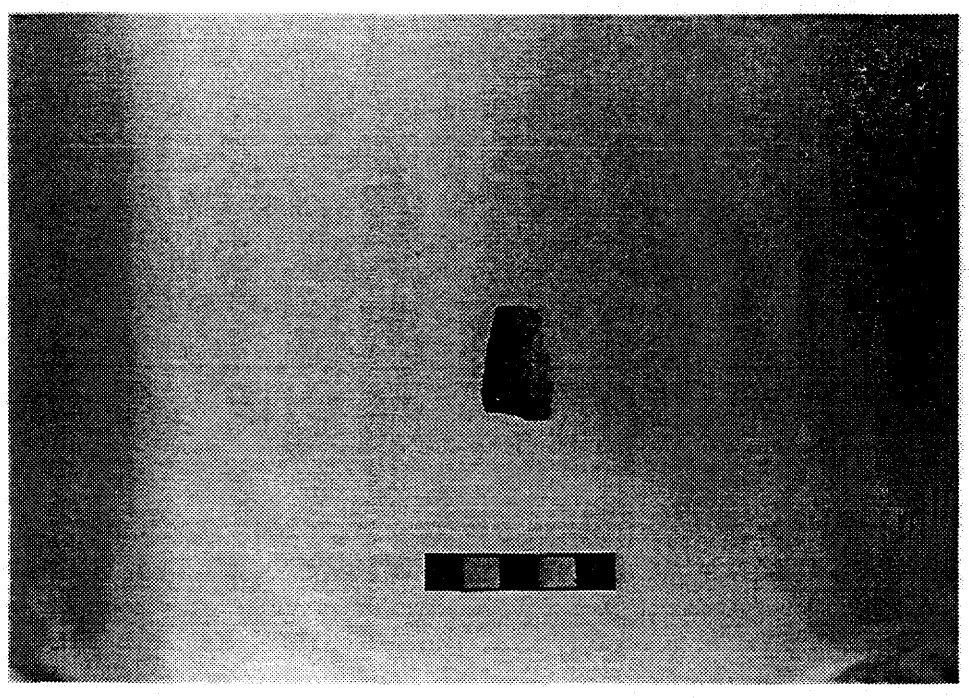
Avonlea Complex Side-Scrapers: Specimen Nos. (Left to Right) 7S 14W-12, 9S 13W-12, 7S 14W-26.

Scale = 5 cm



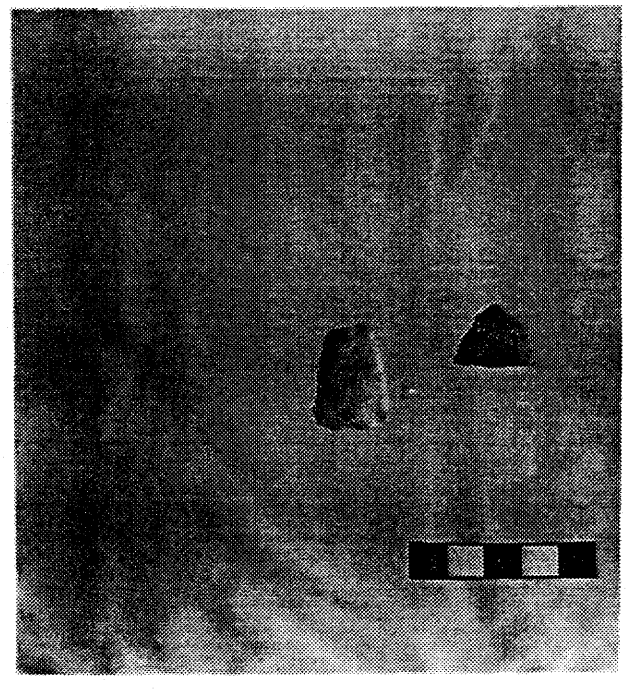
Avonlea Complex Hammerstone: Specimen No. 5S 13W-13.

Scale = 5 cm



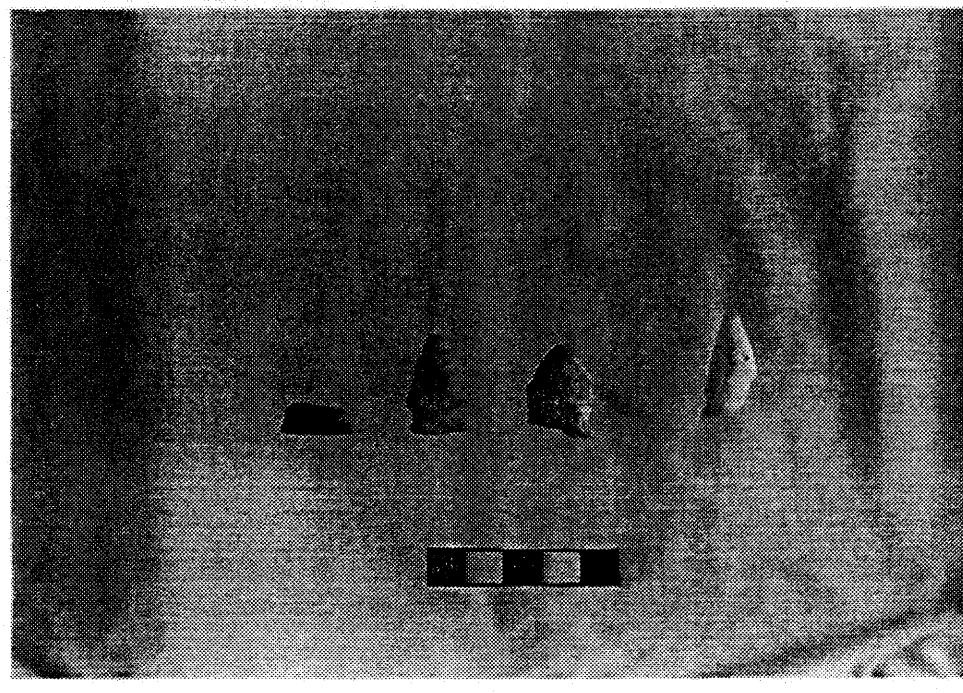
Possilbe McKean Projectile Point taken from disturbed context in Avonlea Level #3 (Area B). Specimen No. 7S-15W-10.

Scale = 5 cm



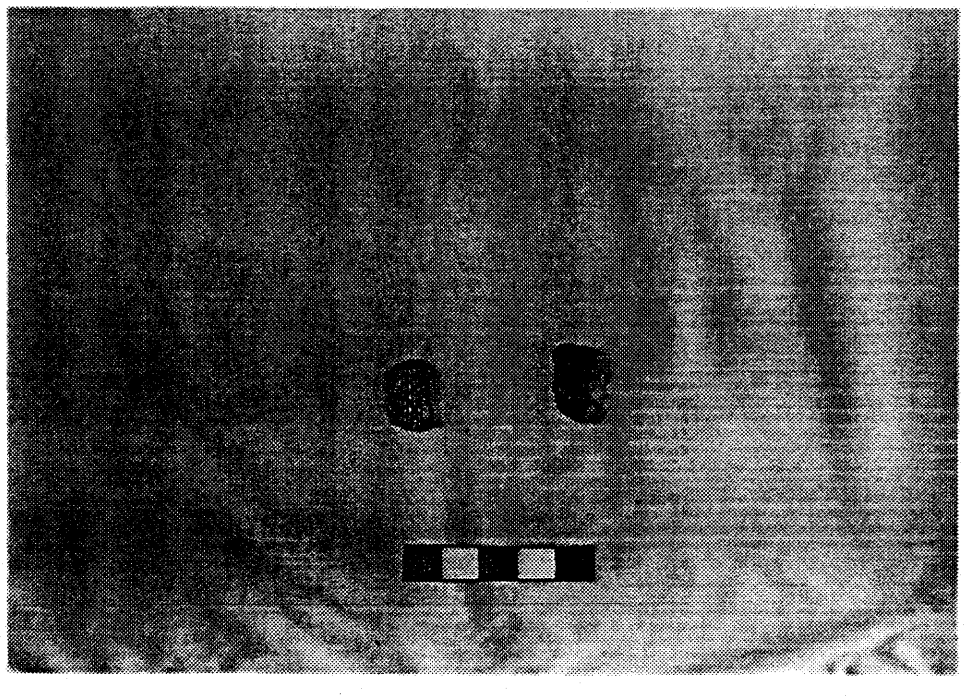
Avonlea Complex Bifaces: Specimen Nos. (Left to Right) A-6-40, A-3-7.

Scale = 5 cm



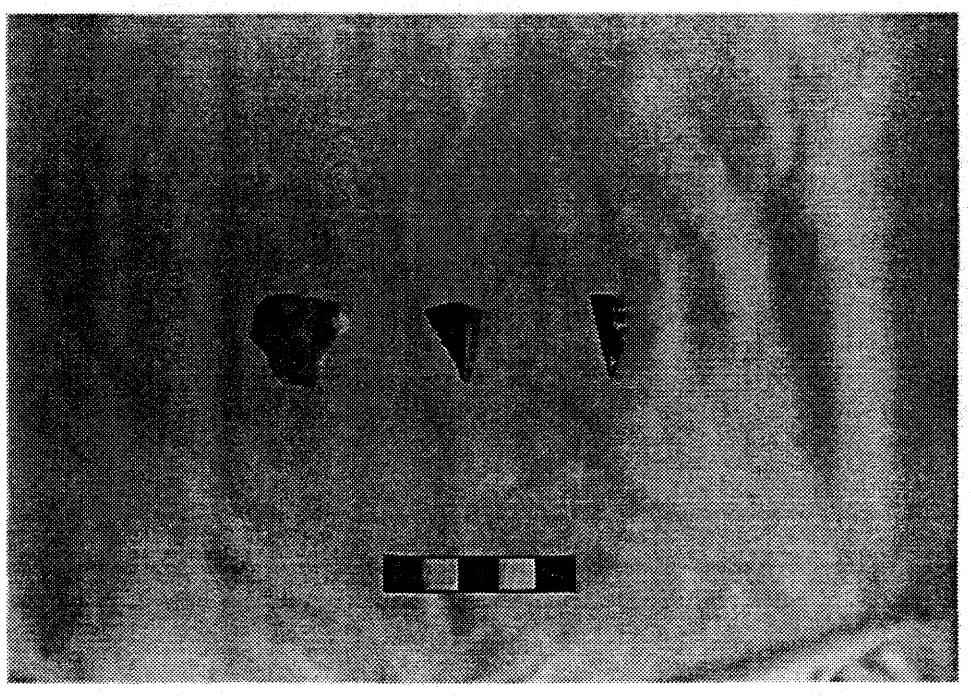
Sandy Creek Complex Projectile Points: Specimen Nos. (Left to Right) 7S 14W-60, A-4-70, 7S 13W-72, A-1-54.

Scale = 5 cm



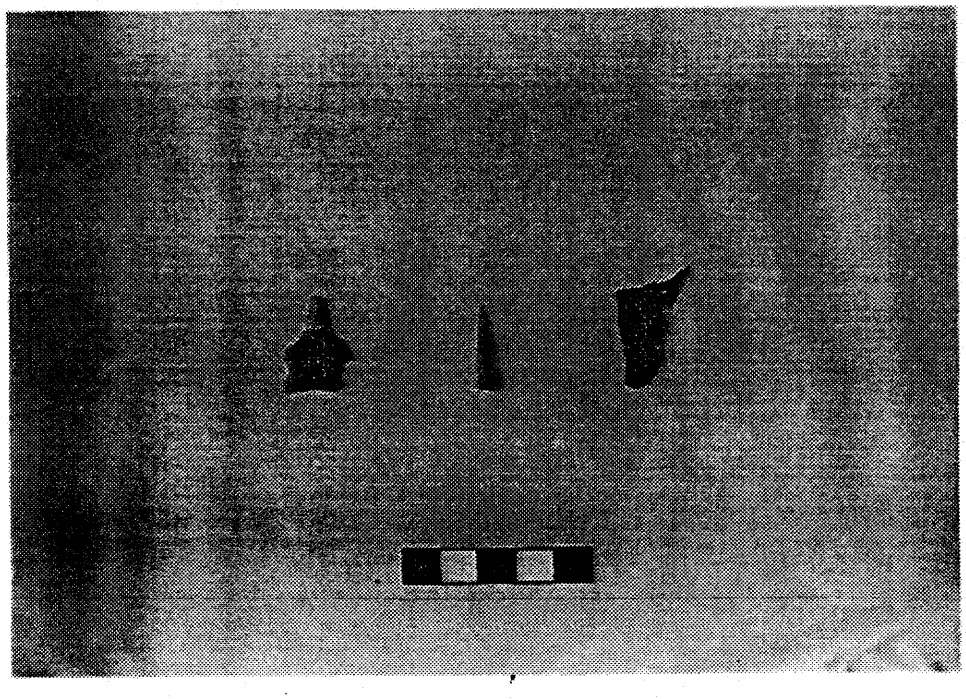
Sandy Creek Complex Endscrapers: Specimen Nos. (Left to Right) A-4-62, A-6-61.

Scale = 5 cm



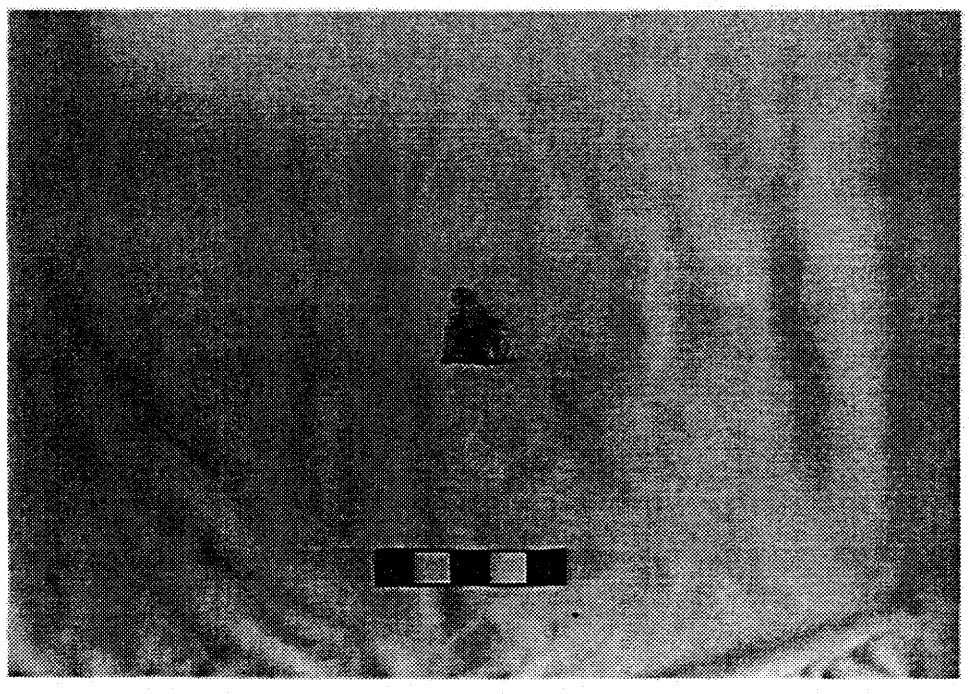
Sandy Creek Complex Endscrapers: Specimen Nos. (Left to Right) 8S 13W-55, 9S 14W-55, 8S 13W-63.

Scale = 5 cm



Sandy Creek Complex Drills: Specimen Nos. (Left to Right) 8S 13W-93, 9S 13W-82, 9S 14W-45.

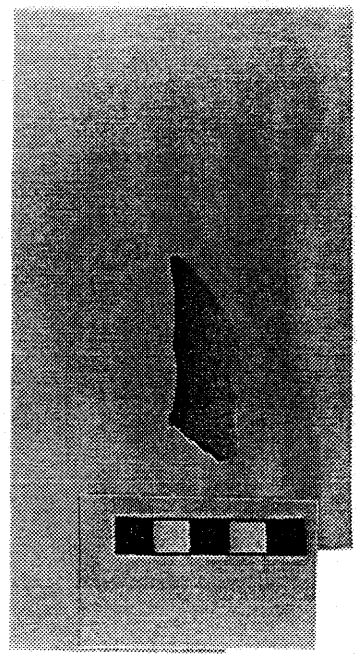
Scale = 5 cm



Unknown Complex Level #7 (Area B) Drill: Specimen No. 9S 14W-73.
Scale = 5 cm

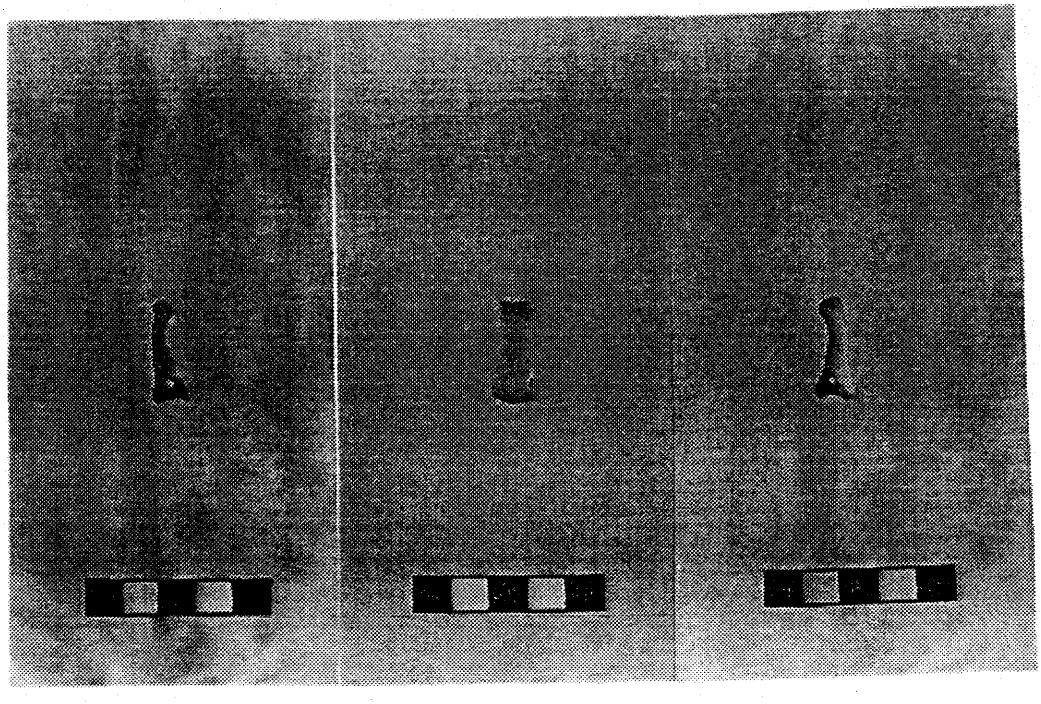
APPENDIX V

ORGANIC ARTIFACT PLATES



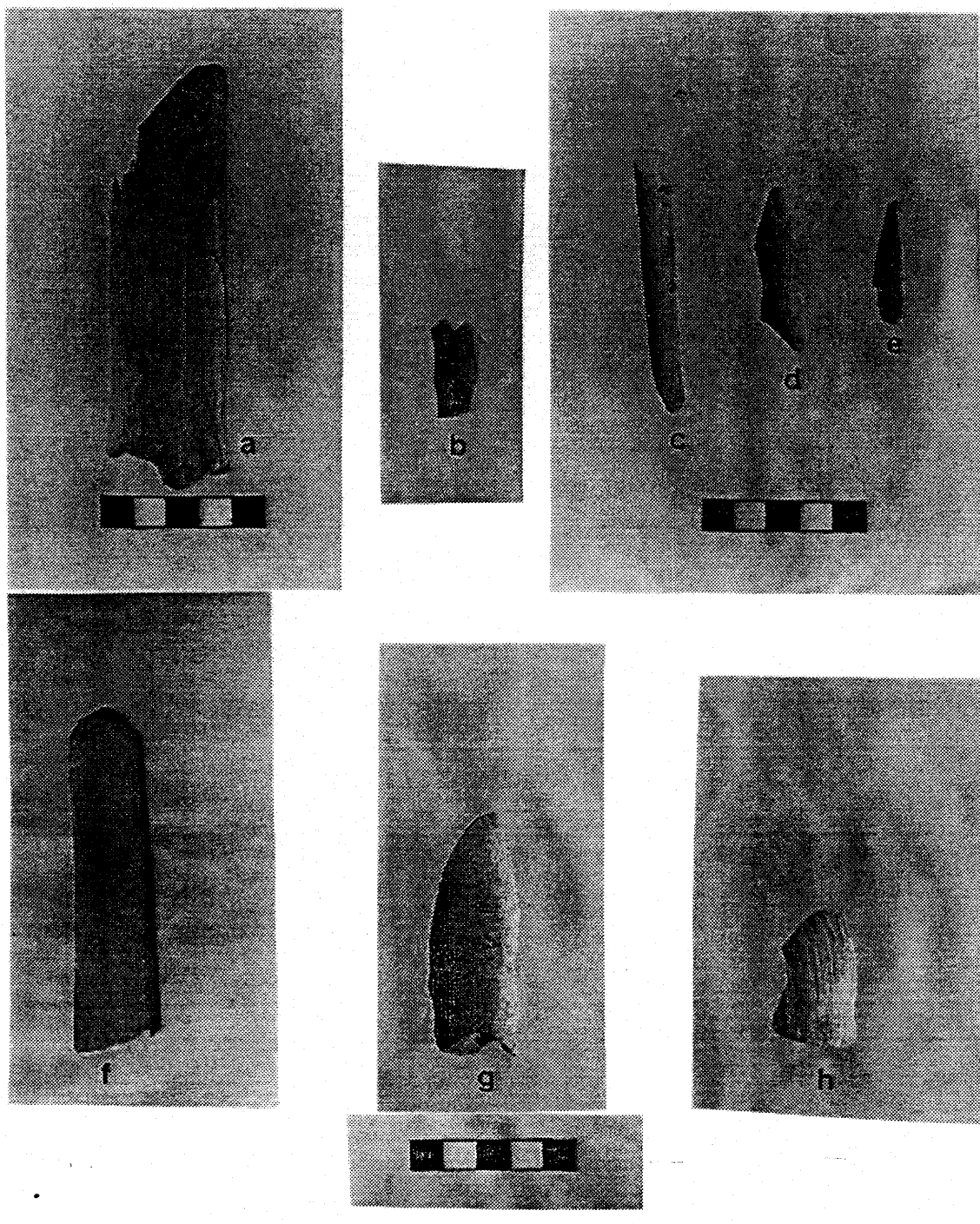
Late Prairie or Plains Side-Notched Spatula-shaped tool:
Specimen No. S-1-34.

Scale = 5 cm



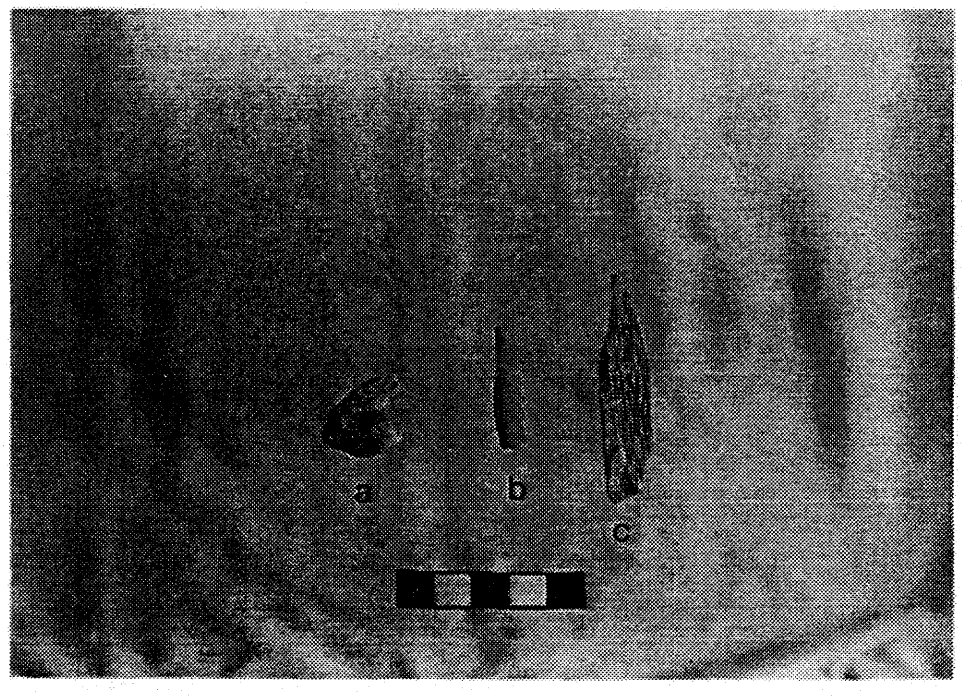
Avonlea Complex: Drilled Human (2nd phalange) Pendant. Various views.
Specimen No. A-8-20.

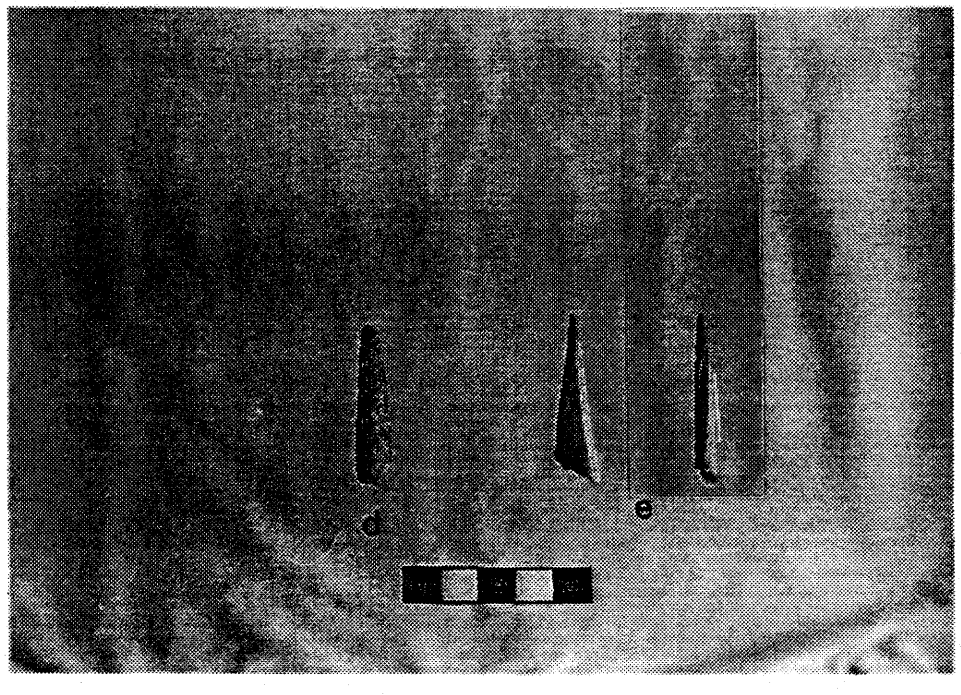
Scale = 5 cm



Avonlea Complex Organic Artifacts:
a: flesher (5S 15W-9); b: flesher tip (7S 14W-10); c: fishing spear portion (9S 14W-12); d: fishing spear portion (9S 14W-13); e: fishing spear portion (9S 14W-11); f: rib flesher tool (4S 16W-6); g: bone knife(?) (9S 15W-12); h: clam shell spoon (S-5-13).

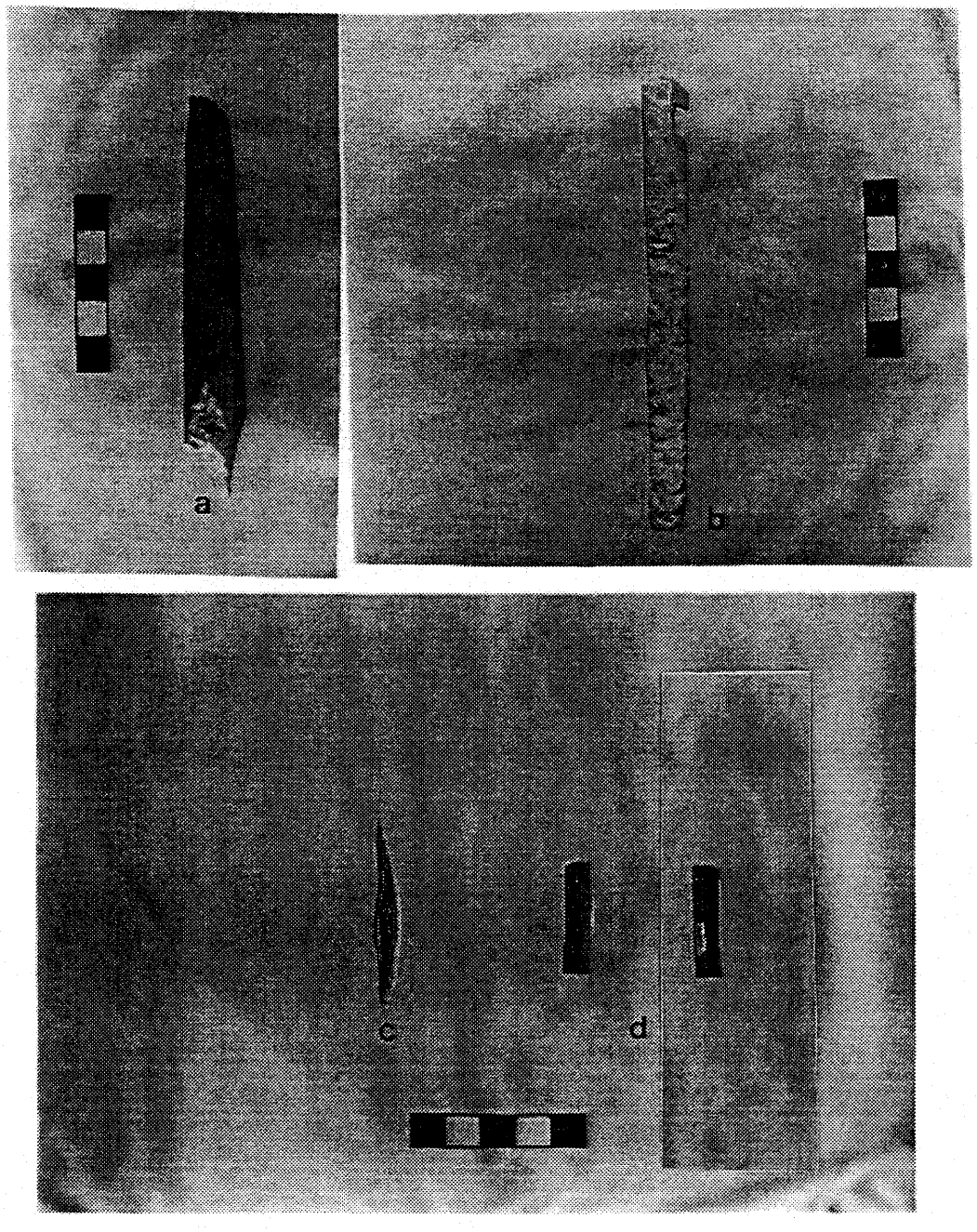
Scale = 5 cm





Sandy Creek Complex Organic Artifacts:
a: Awl proximal end (A-6-40); b: Awl tip(?) (A-6-27); c: rib-bone knife(?) (A-3-2); d: fishing spear tip (8S 13W-27); e: Needle: lateral and ventral views (8S 14W-48).

Scale = 5 cm



Late Plains Indian Period Organic Artifacts from backdirt recoveries in Area R: a: flesher (R-S-3); b: barbed bone fishing spear (R-S-4); c: bone needle (R-S-2); d: beaver incisor chisel (R-S-1); dorsal and ventral views.

Scale = 5 cm

APPENDIX VI

DISTRIBUTION (BY NUMBER) OF LITHIC TOOLS, CORES, FIRE-CRACKED ROCK, (BY NUMBER AND WEIGHT) AND DEBITAGE BY LEVEL

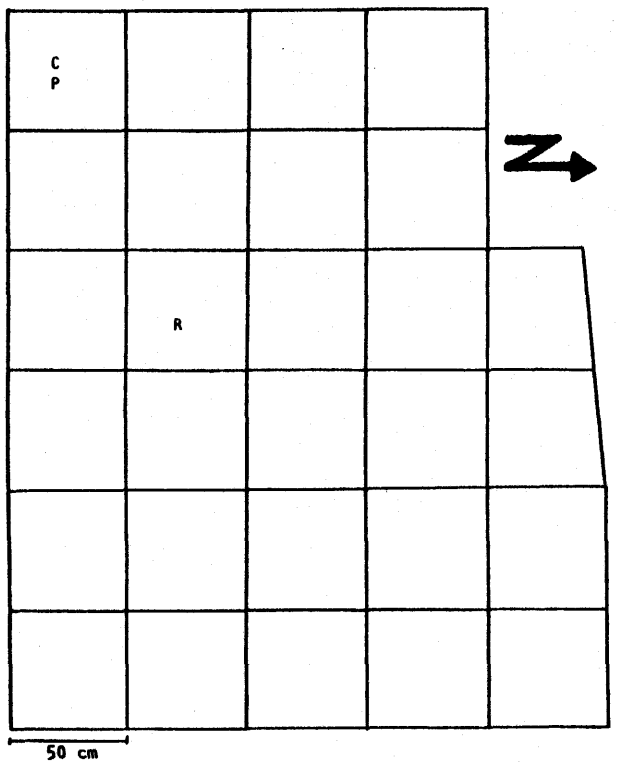


Figure 1 : Distribution Density of Lithic Tools and Lithic Cores Level 2, Fall River Plains Side-Notched, Area S, EeMw-26.

C - Core
P - Projectile Point
R - Retouched Flake

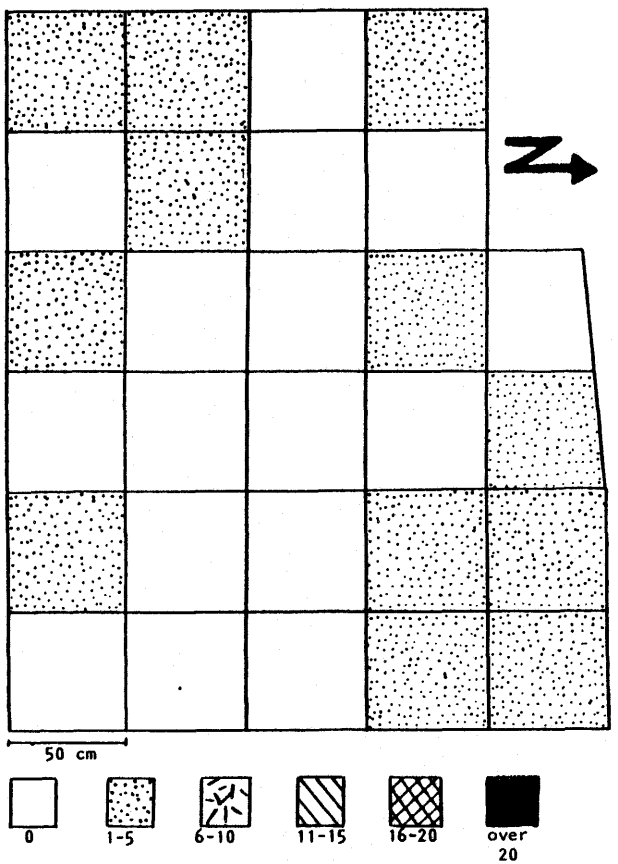


Figure 2 : Distribution Density by Number of Primary Reduction Debitage Level 2, Fall River Plains Side-Notched, Area S, EeMw-26.

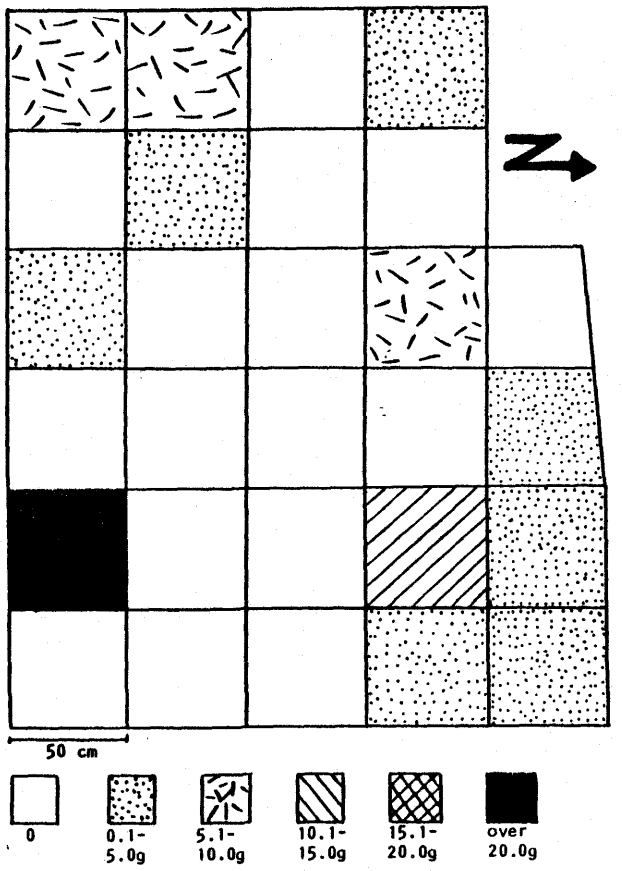


Figure 3 : Distribution Density by Weight of Primary Reduction Debitage Level 2, Fall River Plains Side-Notched, Area S, EeMw-26.

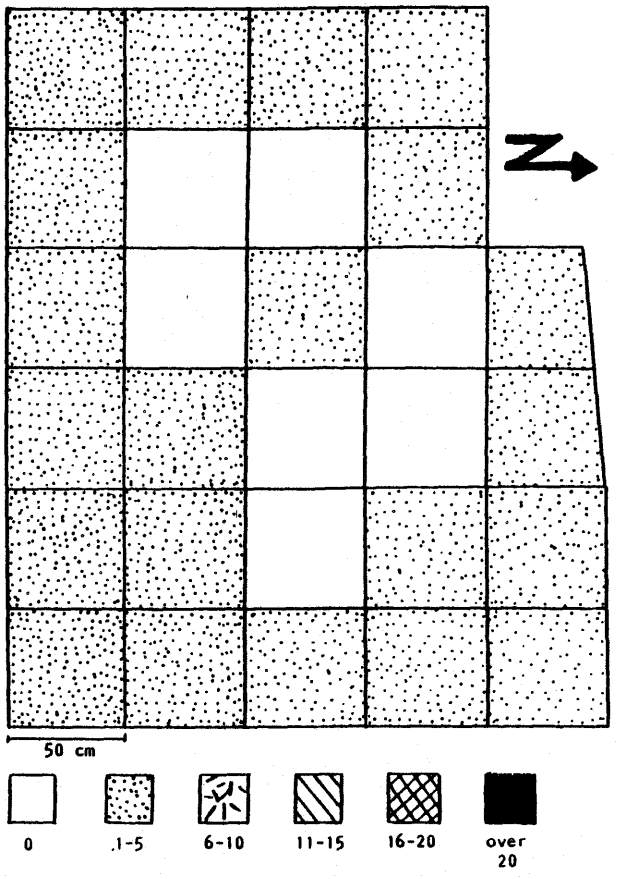


Figure 4 : Distribution Density by Number of Secondary Reduction Debitage Level 2, Fall River Plains Side-Notched, Area S, EeMw-26.

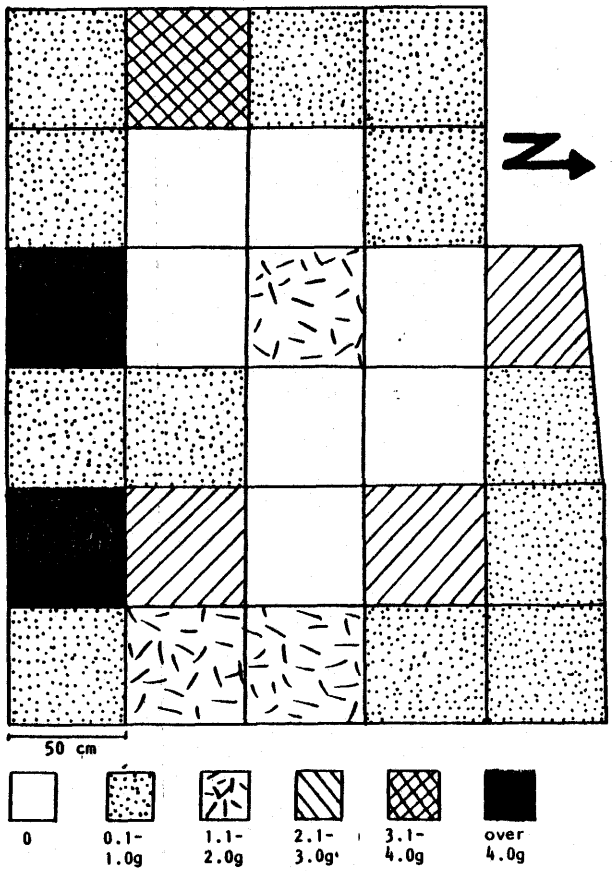


Figure 5 : Distribution Density by Weight of Secondary Reduction Debitage Level 2, Fall River Plains Side-Notched, Area S, EeMw-26.

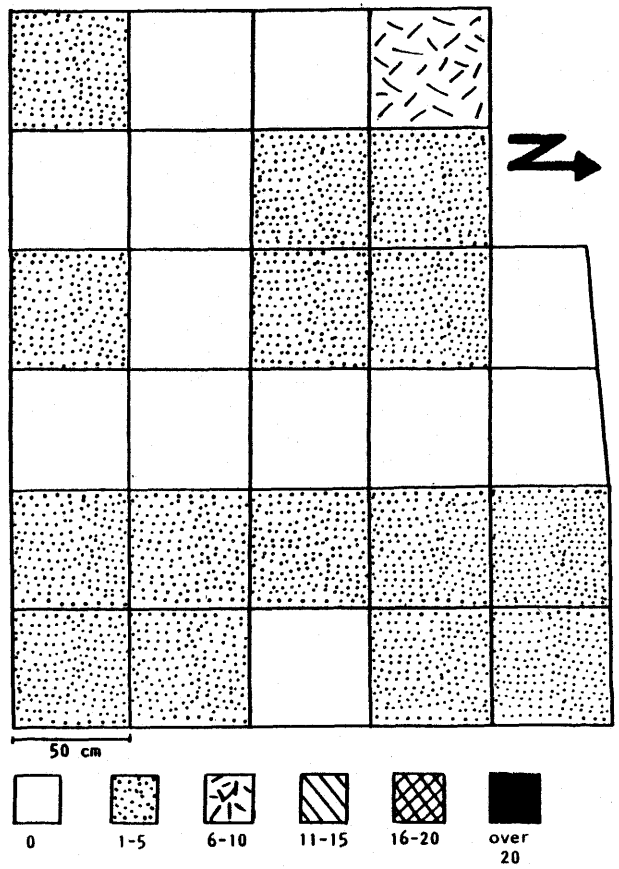
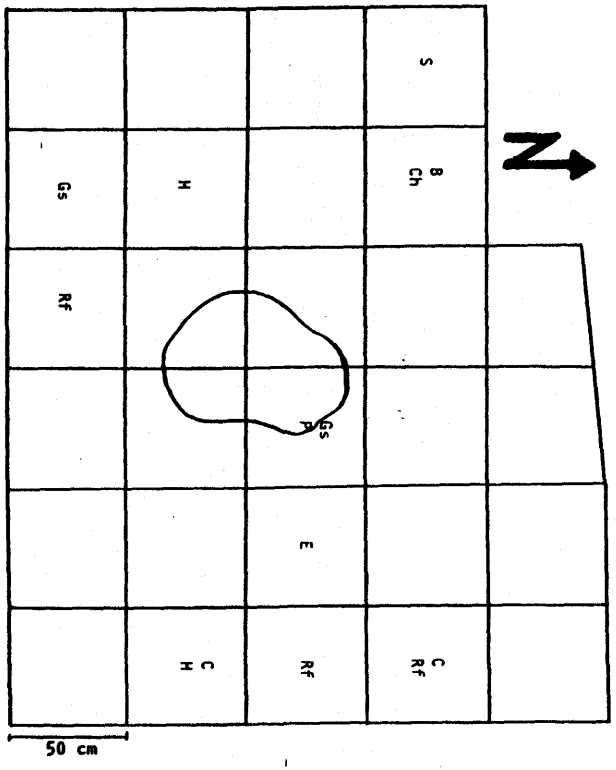


Figure 6 : Distribution Density by Number of Fire-Cracked Rock Level 2, Fall River Plains Side-Notched, Area S, EeMw-26.



H - Hammerstone
Gs - Grinding Stone
Rf - Retouched Flake
C - Core
B - Biface
E - Endscraper
S - Sidescraper
P - Projectile Point
Ch -Chithos

Figure 7 : Distribution of Lithic Tools and Lithic Cores Level 3, Late Prairie or Plains Side-Notched, Area S, EeMw-26.

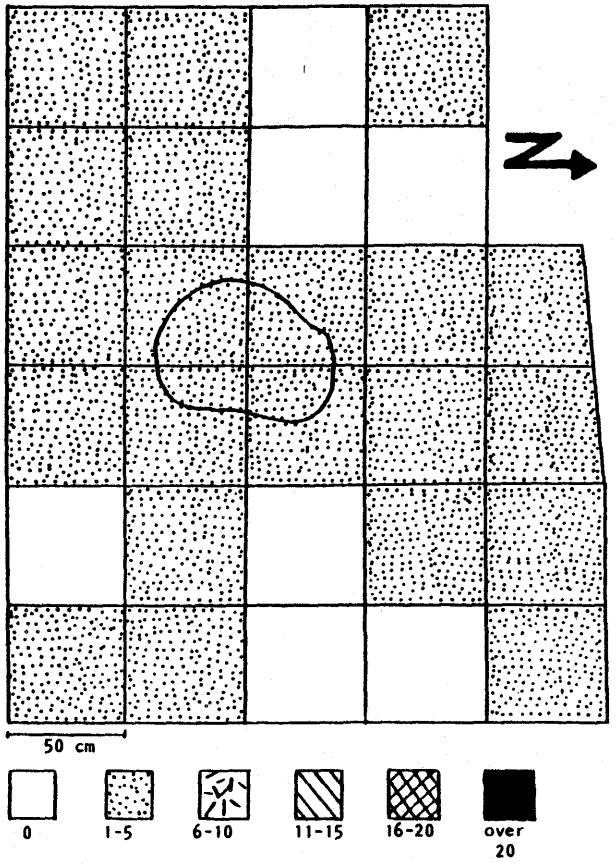


Figure 8 : Distribution Density by Number of Primary Reduction Debitage Level 3, Late Prairie or Plains Side-Notched, Area S, EeMw-26.

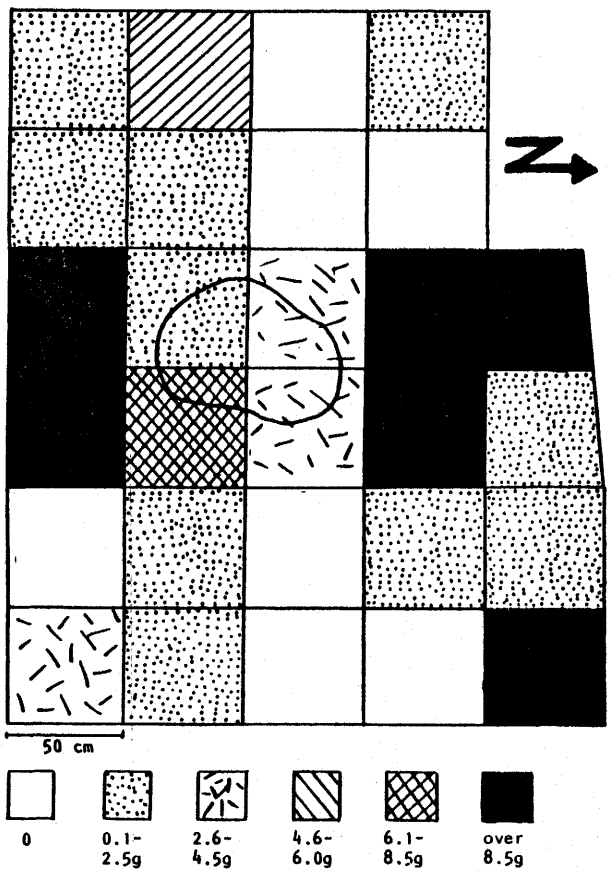


Figure 9 : Distribution Density by Weight of Primary Reduction Debitage Level 3, Late Prairie or Plains Side-Notched, Area S, EeMw-26.

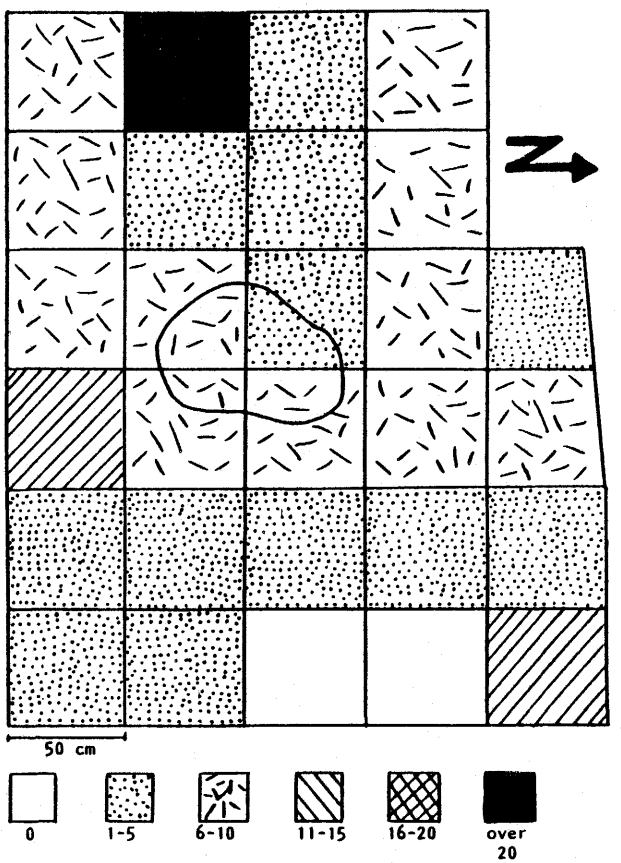


Figure 10: Distribution Density by Number of Secondary Reduction Debitage Level 3, Late Prairie or Plains Side-Notched, Area S, EeMw-26.

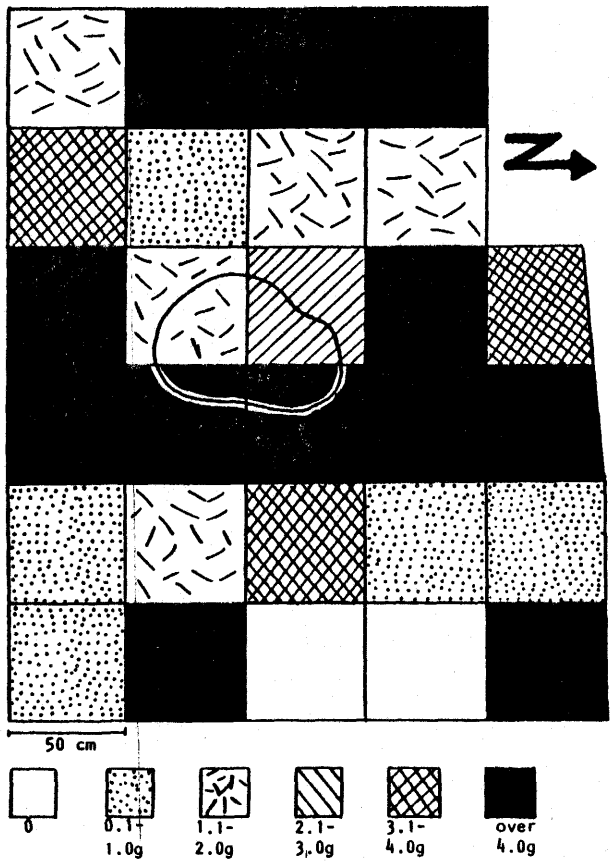


Figure 11: Distribution Density by Weight of Secondary Reduction Debitage Level 3, Late Prairie or Plains Side-Notched, Area S, EeMw-26.

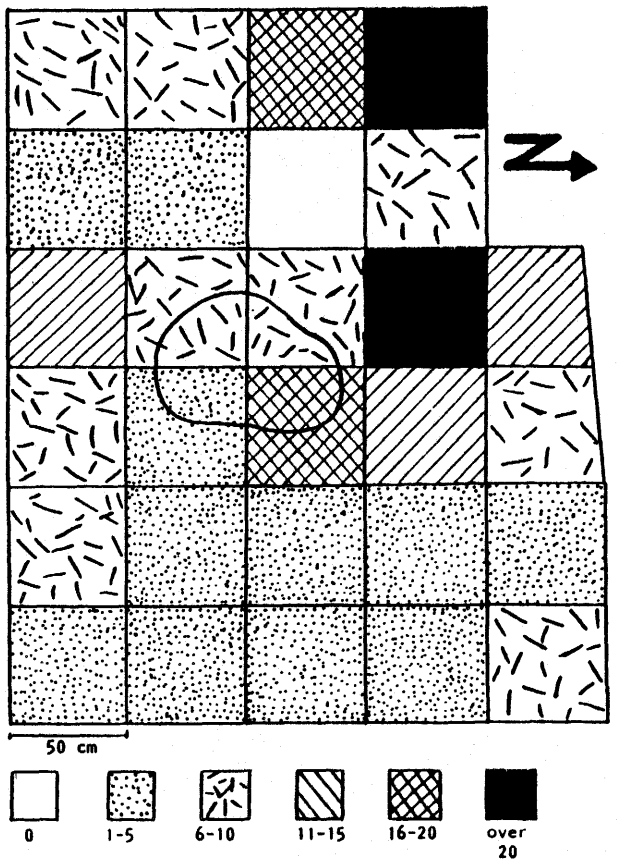


Figure 12: Distribution Density by Number of Fire-Cracked Rock Level 3, Late Plains or Prairie Side-Notched, Area S, EeMw-26.

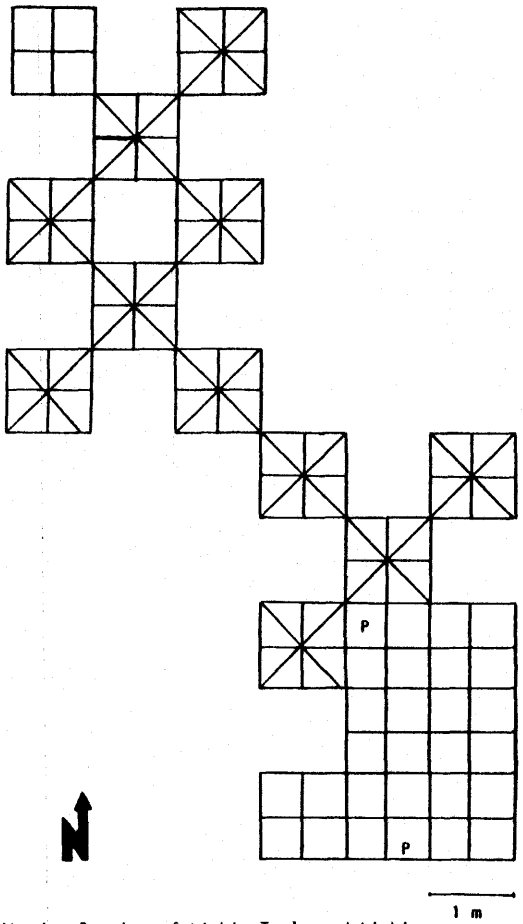


Figure 13: Distribution Density of Lithic Tools and Lithic Cores Level 2A, Prairie Side-Notched, Area B, EeMw-26.

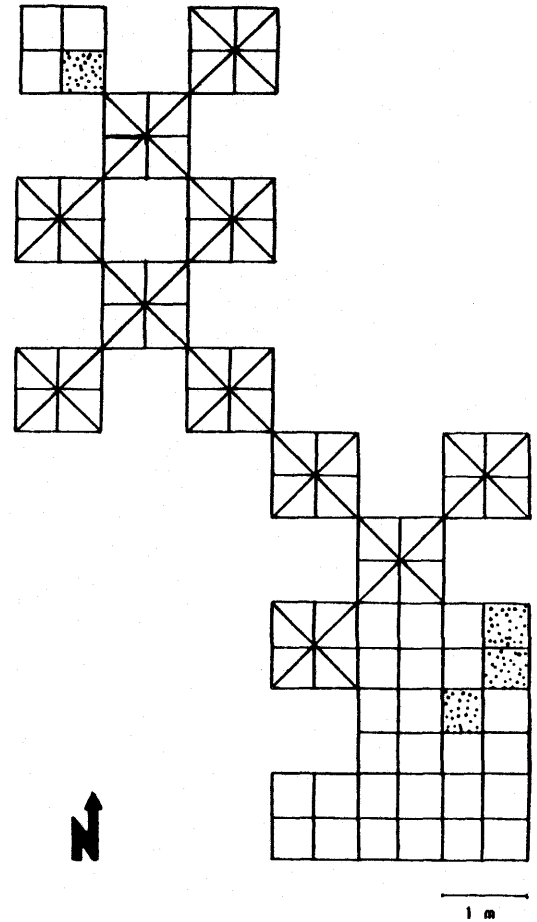


Figure 14: Distribution Density by Number of Primary Reduction Debitage Level 2A, Prairie Side-Notched, Area B, EeMw-26.

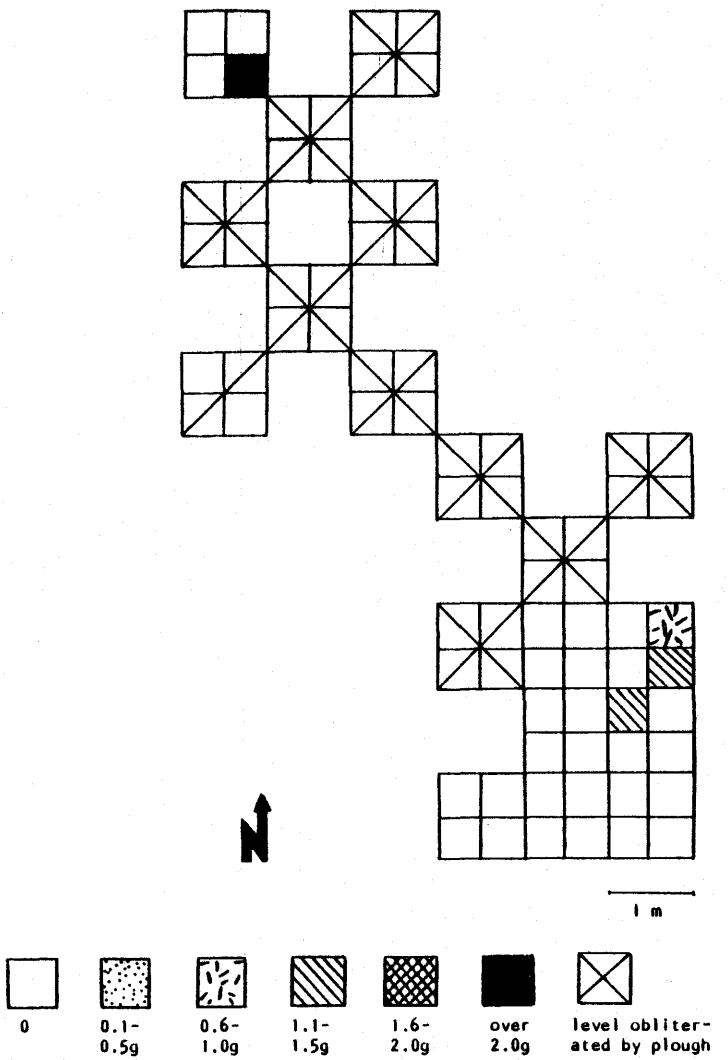


Figure 15: Distribution Density by Weight of Primary Reduction Debitage Level 2A, Prairie Side-Notched, Area B, EeMw-26.

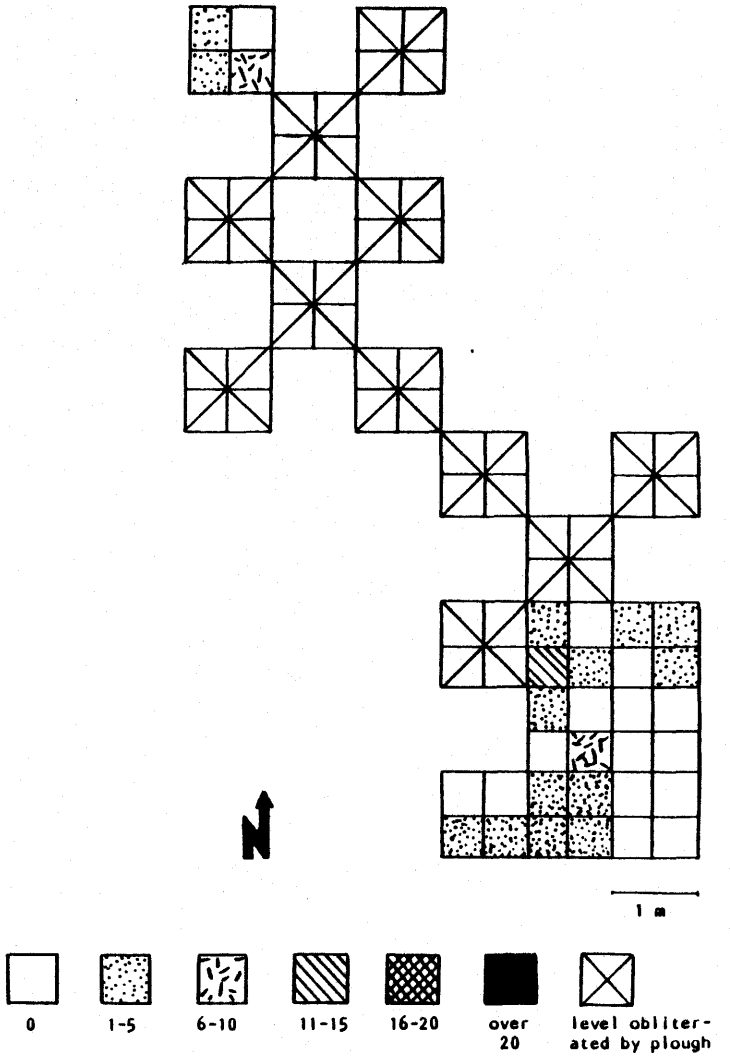


Figure 16: Distribution Density by Number of Secondary Reduction Debitage Level 2A, Prairie Side-Notched, Area B, EeMw-26.

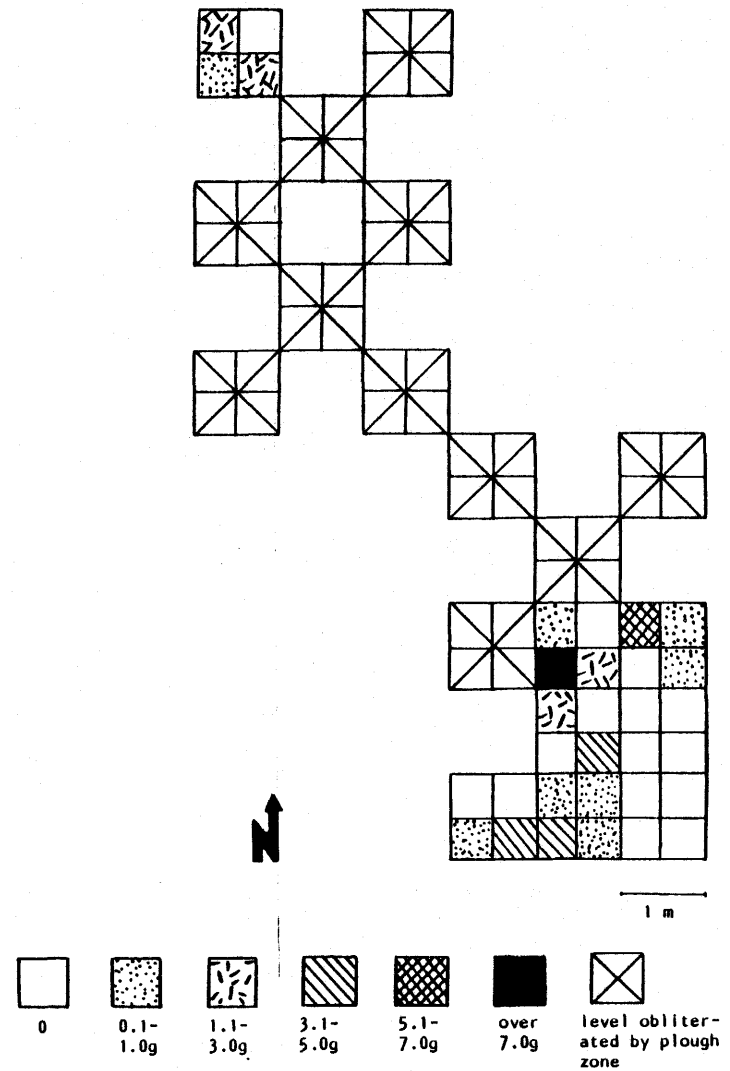


Figure 17: Distribution Density by Weight of Secondary Reduction Debitage Level 2A, Prairie Side-Notched, Area B, EeMw-26.

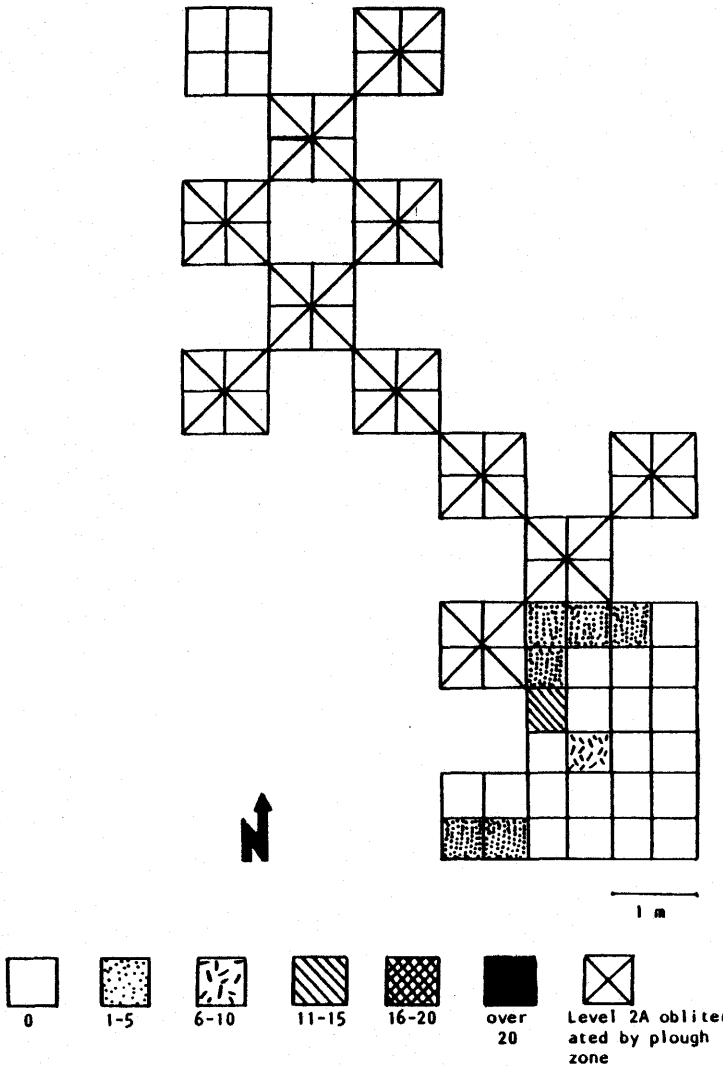


Figure 18: Distribution Density by Number of Fire-Cracked Rock Level 2A, Prairie Side-Notched, Area B, EeMw-26.

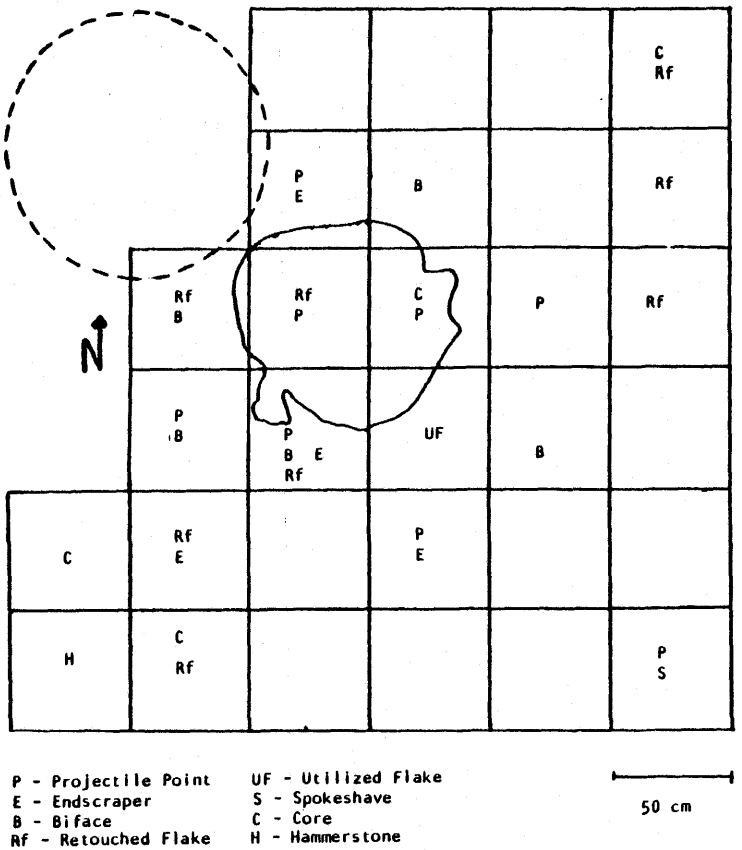


Figure 19: Distribution of Lithic Tools and Lithic Cores Level 3, Avonlea, Area A, EeMw-26.

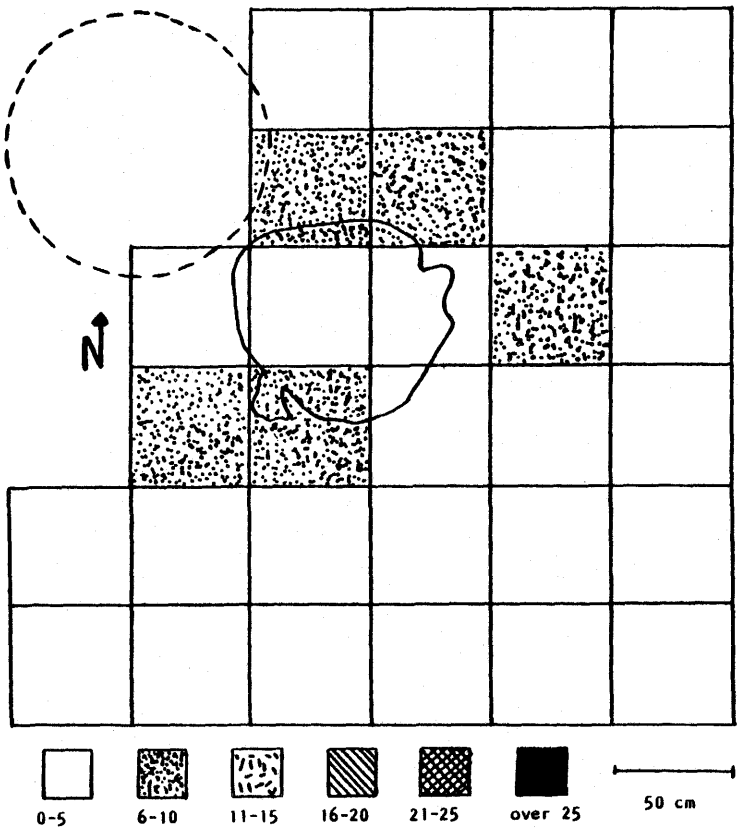


Figure 20: Distribution Density by Number of Primary Reduction Debitage Level 3, Avonlea, Area A, EeMw-26.

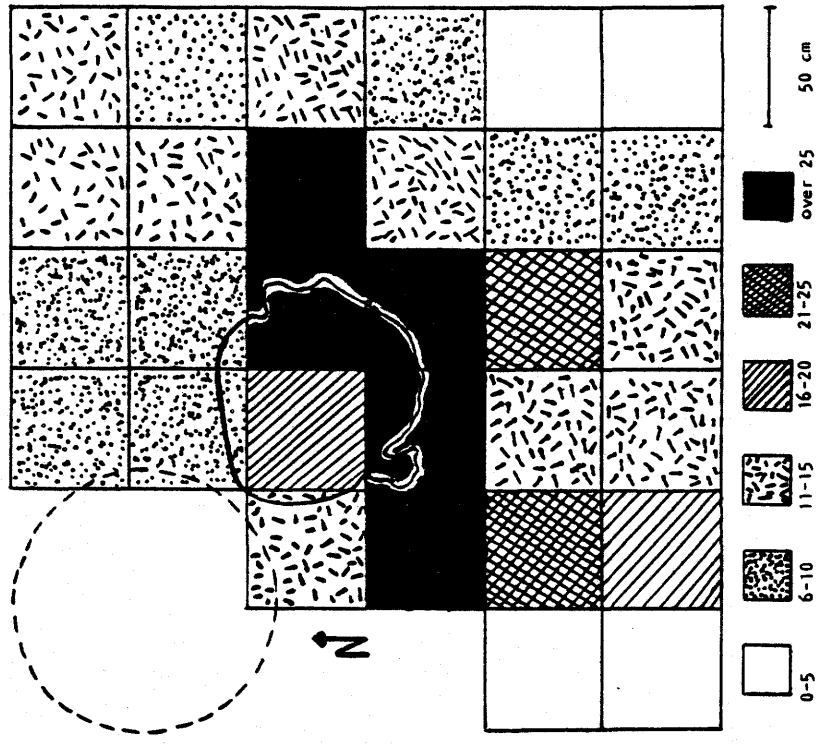


Figure 22: Distribution Density by Number of Secondary Reduction Debitage Level 3, Avonlea, Area A, EeMw-26.

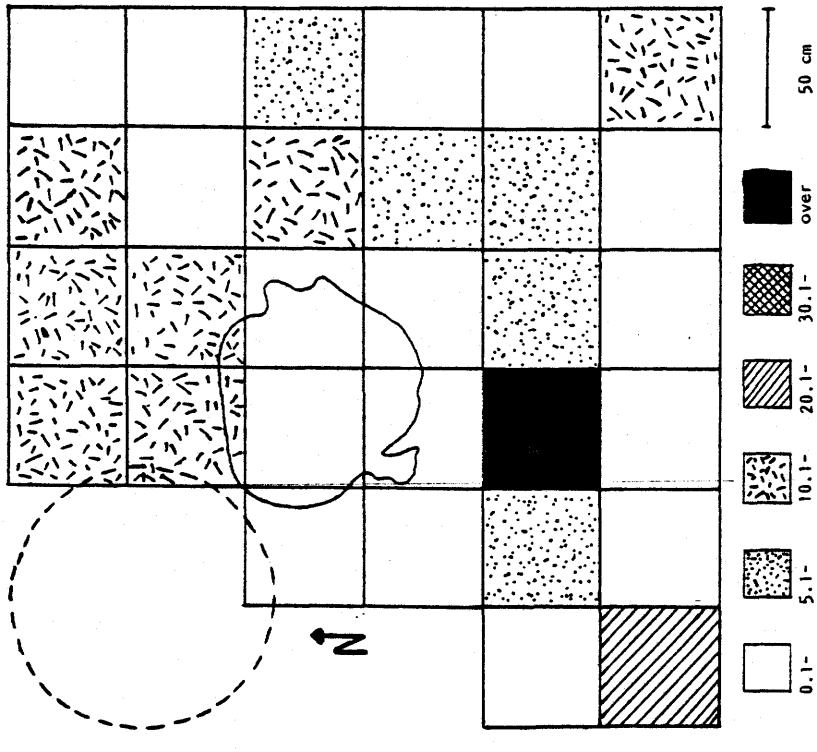


Figure 21: Distribution Density by Weight of Primary Reduction Debitage Level 3, Avonlea, Area A, EeMw-26.

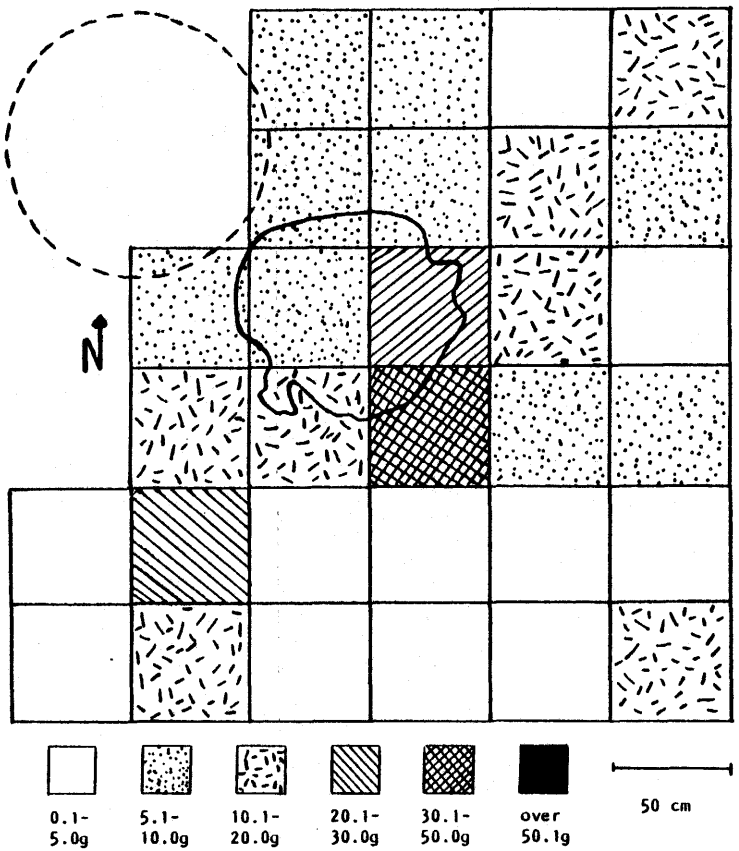


Figure 23: Distribution Density by Weight of Secondary Reduction Debitage Level 3, Avonlea, Area A, EeMw-26.

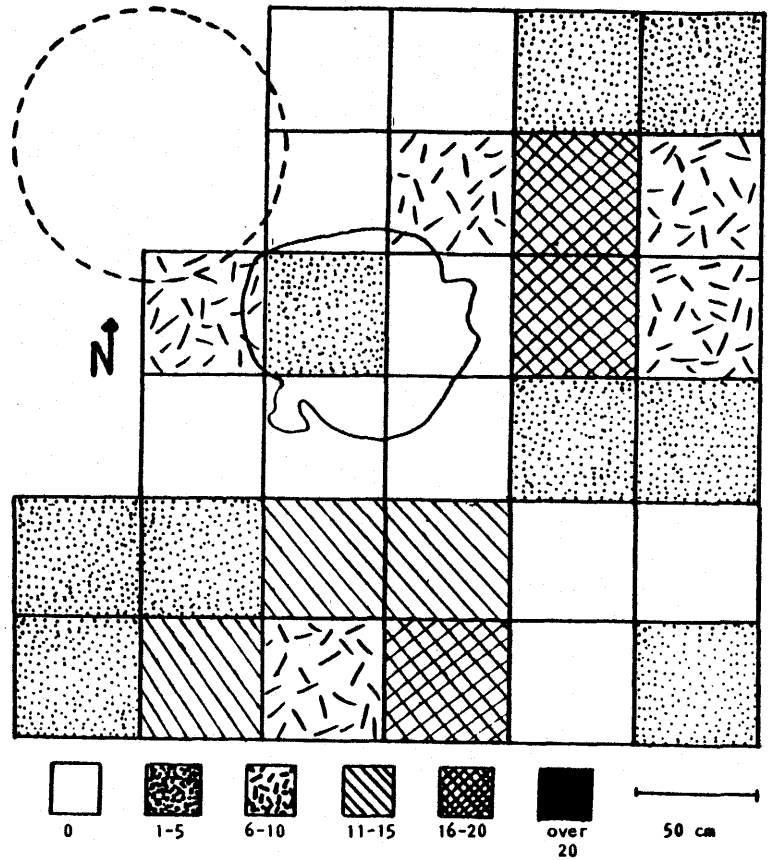
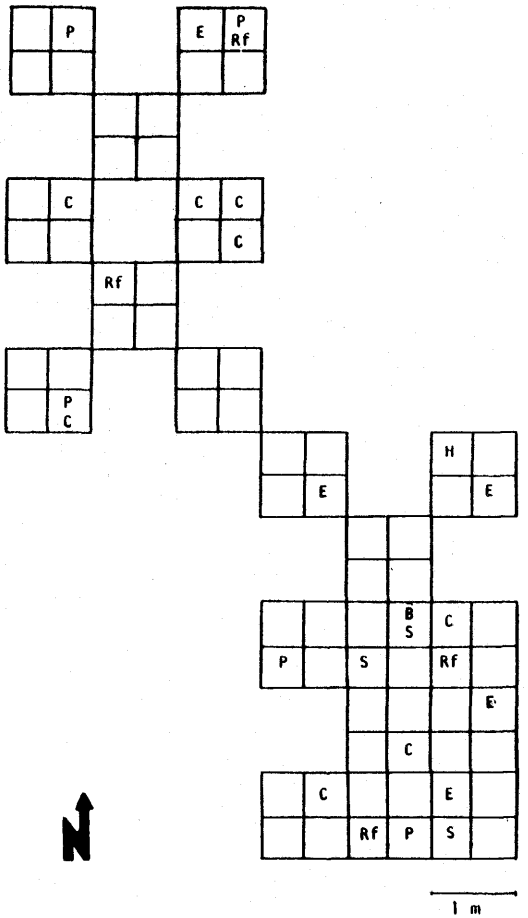


Figure 24: Distribution Density by Number of Fire-Cracked Rock Level 3, Avonlea, Area A, EeMw-26.



Rf - Retouched Flake
P - Projectile Point
E - Endscraper
S - Sidescraper
C - Core
H - Hammerstone
B - Biface

Figure 25 Distribution of Lithic Tools and Lithic Cores Level 3, Avonlea, Area B, EeMw-26.

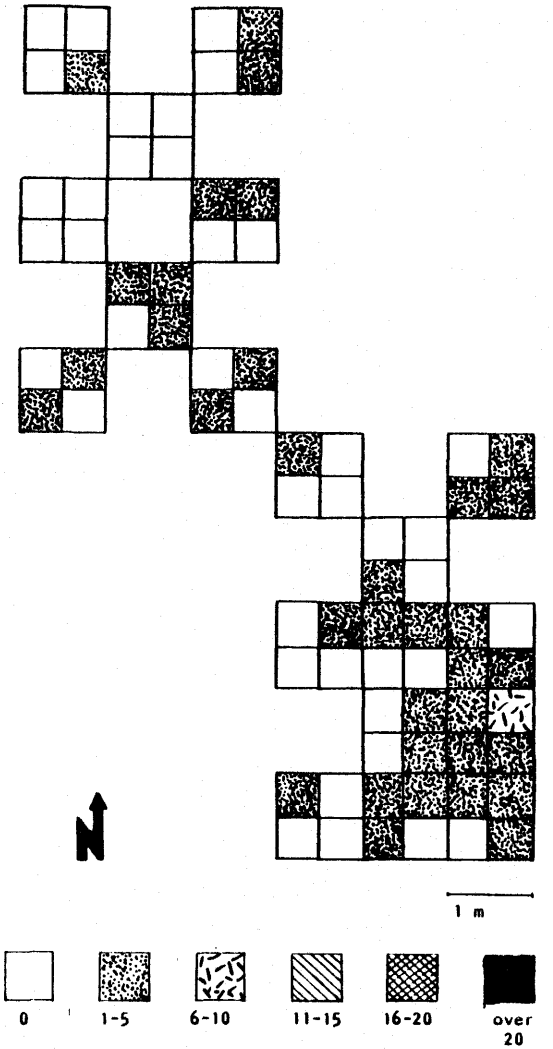


Figure 26: Distribution Density by Number of Primary Reduction Debitage Level 3, Avonlea, Area B, EeMw-26.

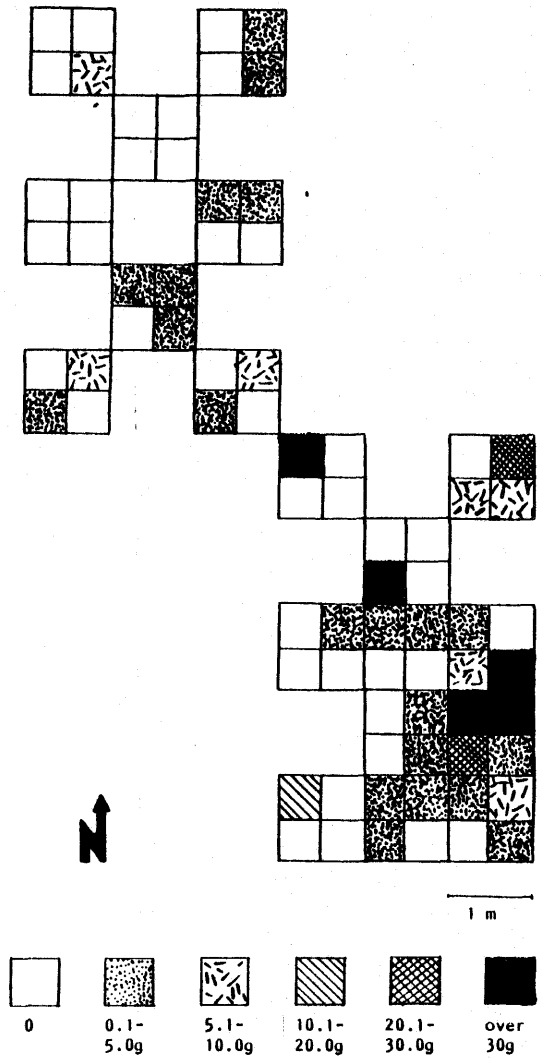


Figure 27: Distribution Density by Weight of Primary Reduction Debitage Level 3, Avonlea, Area B, EeMw-26.

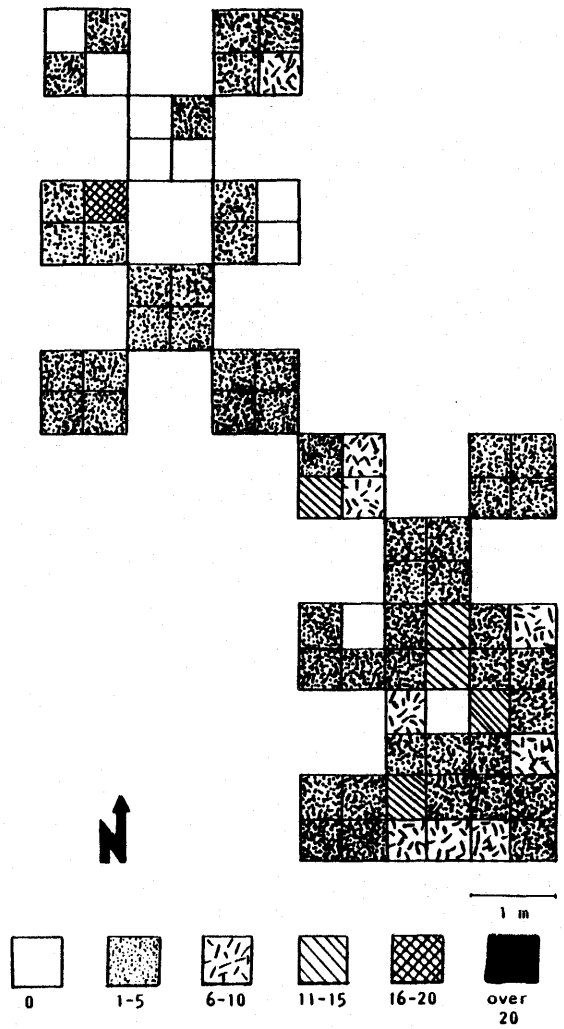


Figure 28: Distribution Density by Number of Secondary Reduction Debitage Level 3, Avonlea, Area B, EeMw-26.

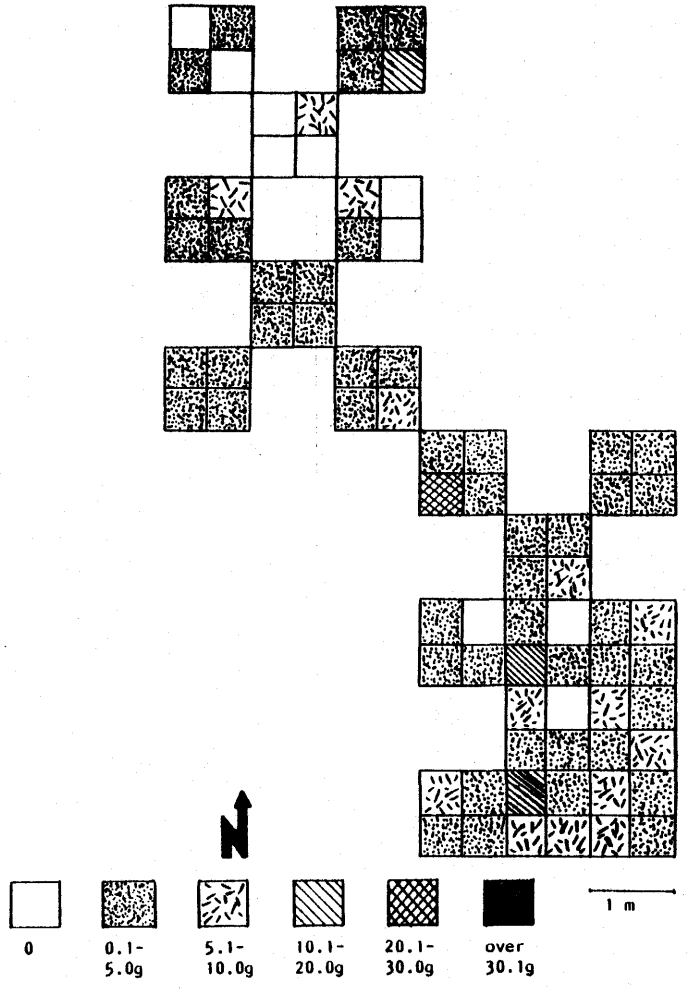


Figure 29: Distribution Density by Weight of Secondary Reduction Debitage Level 3, Avonlea, Area B, EeMw-26.

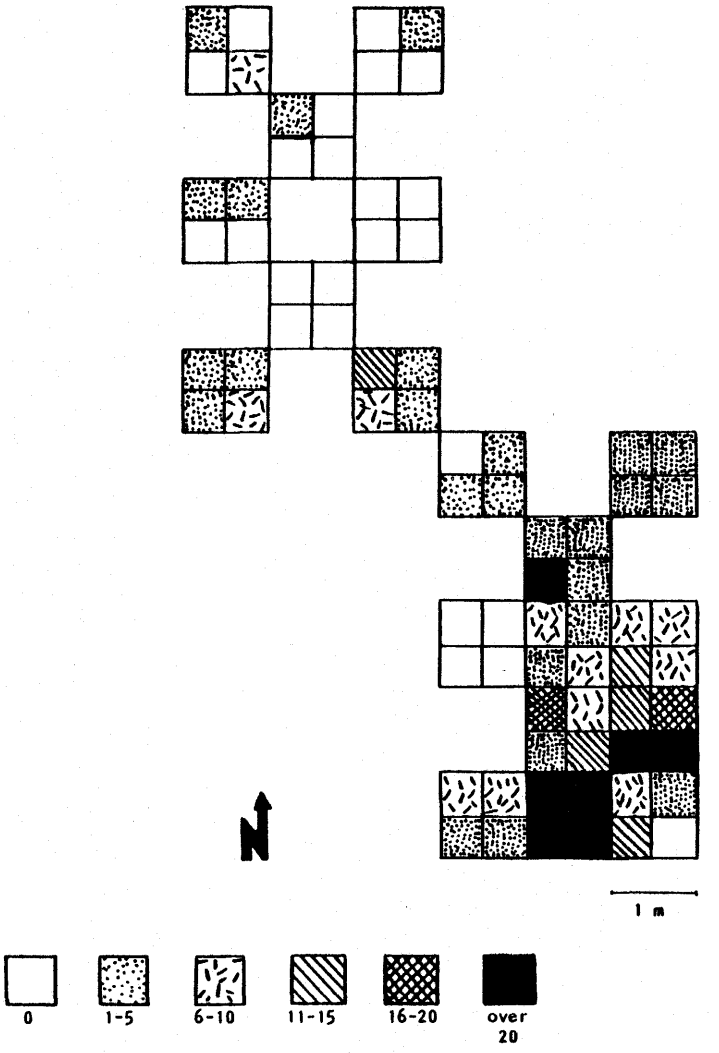
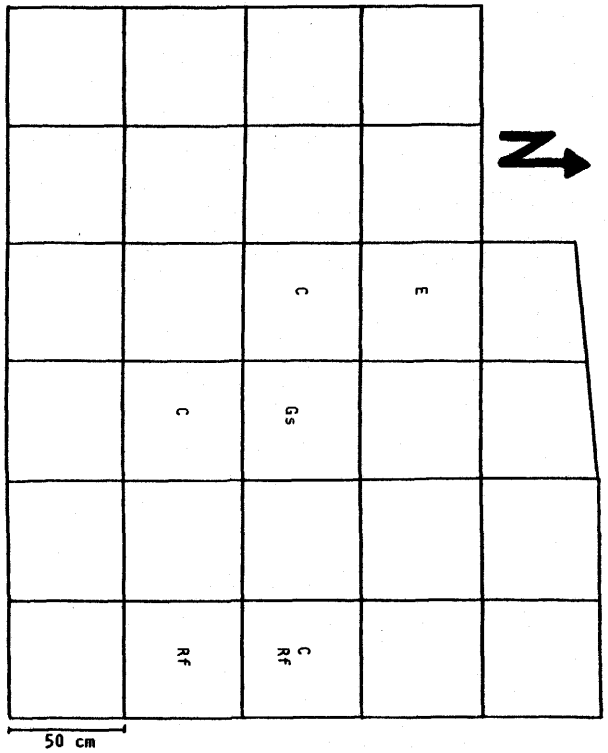


Figure 30: Distribution Density by Number of Fire-Cracked Rock Level 3, Avonlea, Area B, EeMw-26.



E - Endscraper
C - Core
Gs - Grinding Stone
Rf - Retouched Flake

Figure 31: Distribution of Lithic Tools and Lithic Cores Level 4, Avonlea, Area S, EeMw-26.

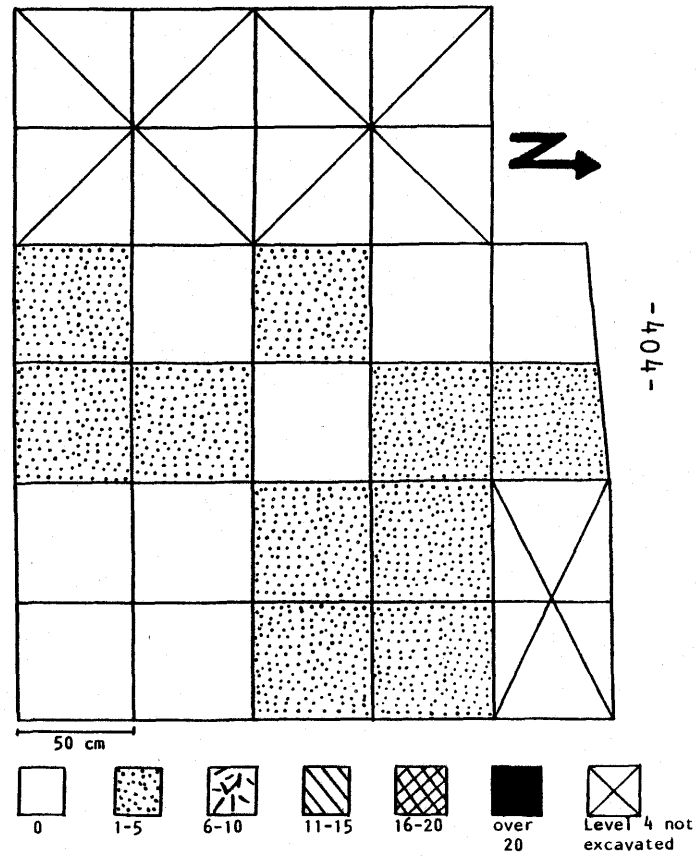


Figure 32: Distribution Density by Number of Primary Reduction Debitage Level 4, Avonlea, Area S, EeMw-26.

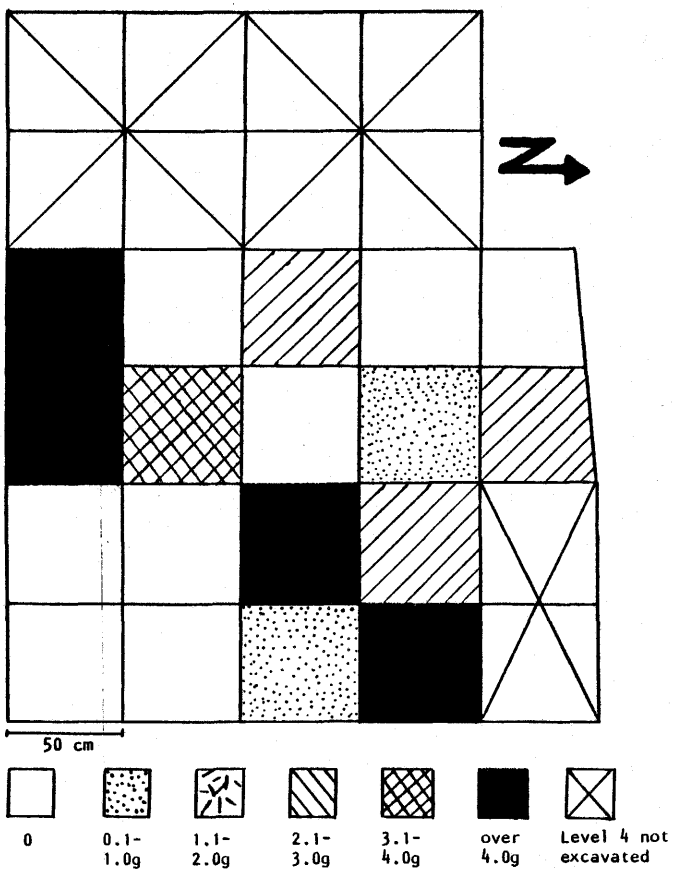


Figure 33: Distribution Density by Weight of Primary Reduction Debitage Level 4, Avonlea, Area S, EeMw-26.

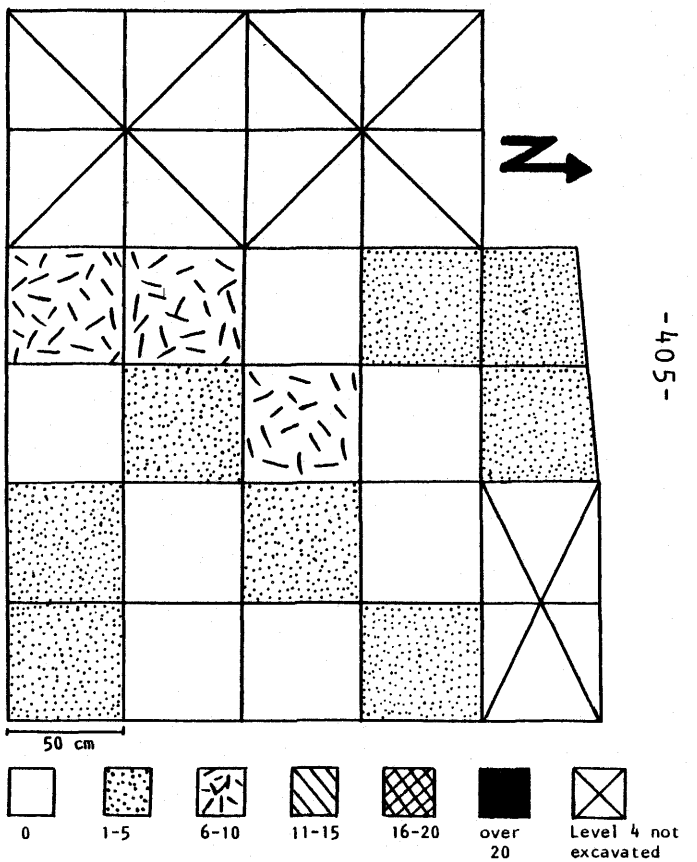


Figure 34: Distribution Density by Number of Secondary Reduction Debitage Level 4, Avonlea, Area S, EeMw-26.

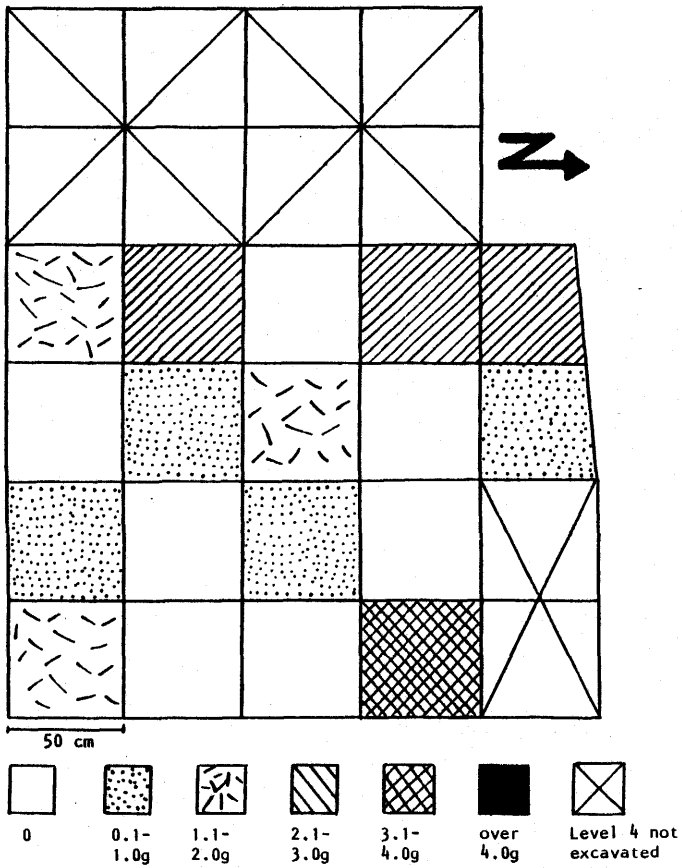


Figure 35: Distribution Density by Weight of Secondary Reduction Debitage Level 4, Avonlea, Area S, EeMw-26.

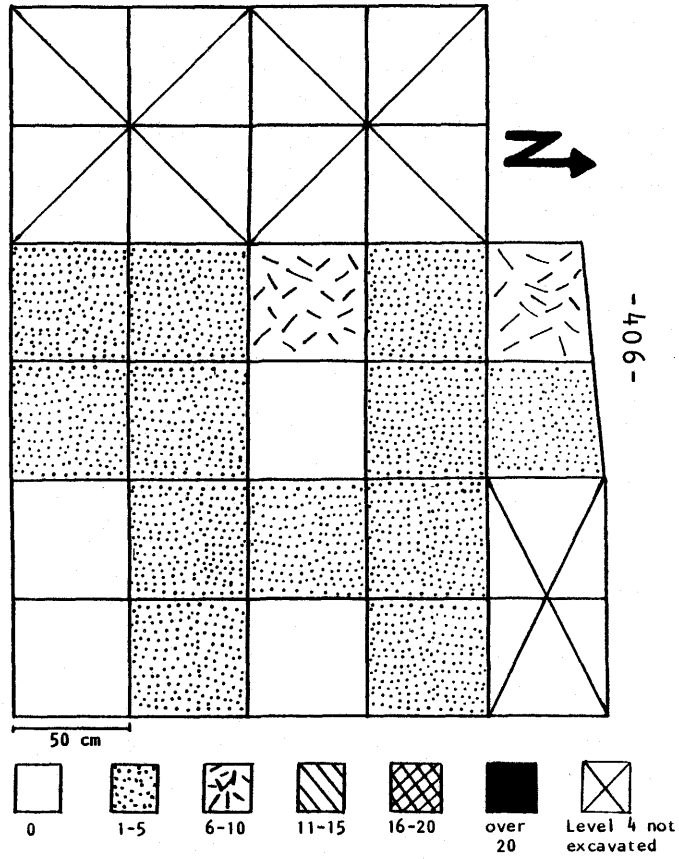
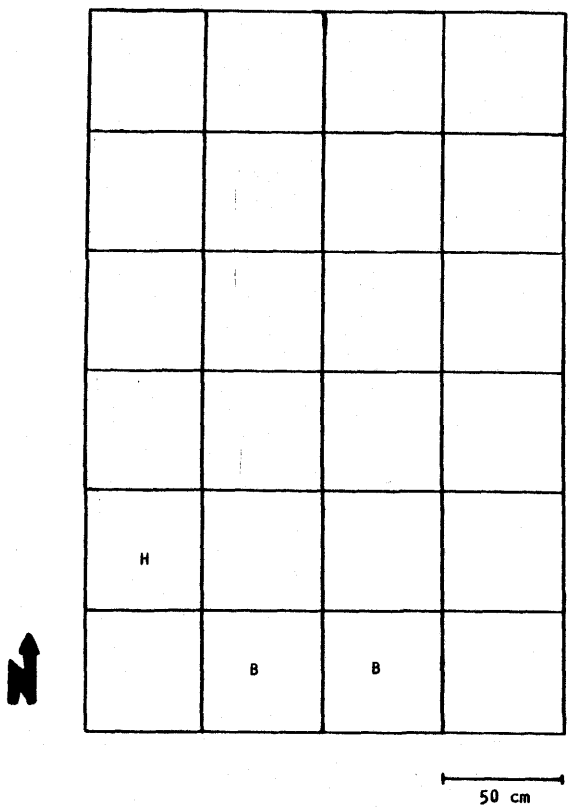


Figure 36: Distribution Density by Number of Fire-Cracked Rock Level 4, Avonlea, Area S, EeMw-26.



H - Hammerstone
B - Biface

Figure 37: Distribution of Lithic Tools and Lithic Cores Level 5, Area B, EeMw-26.

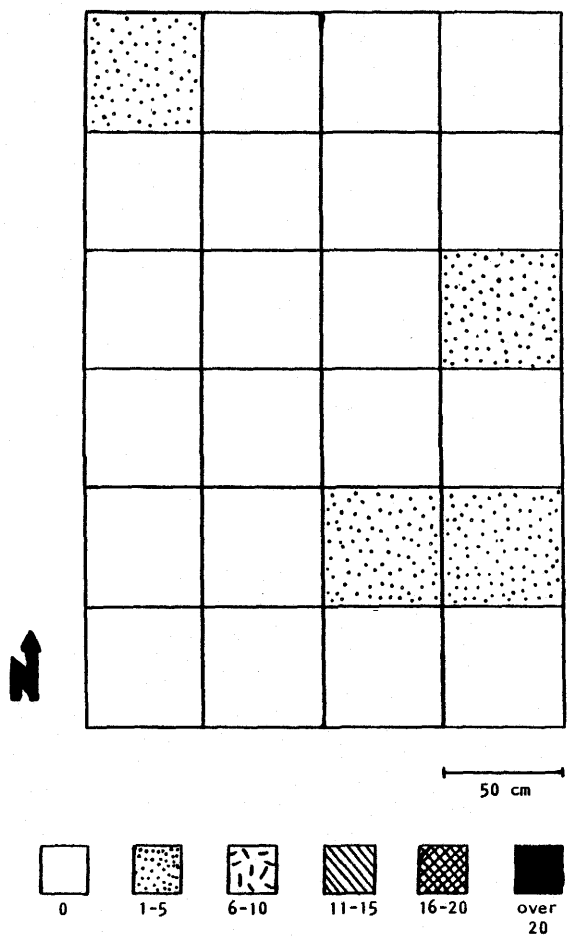


Figure 38: Distribution Density by Number of Primary Reduction Debitage Level 5, Area B, EeMw-26.

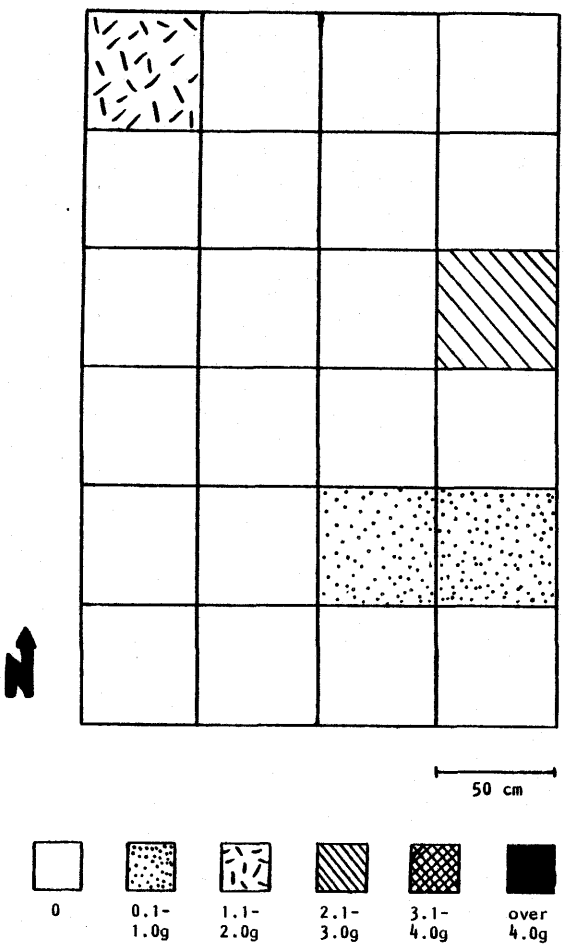


Figure 39: Distribution Density by Weight of Primary Reduction Debitage Level 5, Area B, EeMw-26.

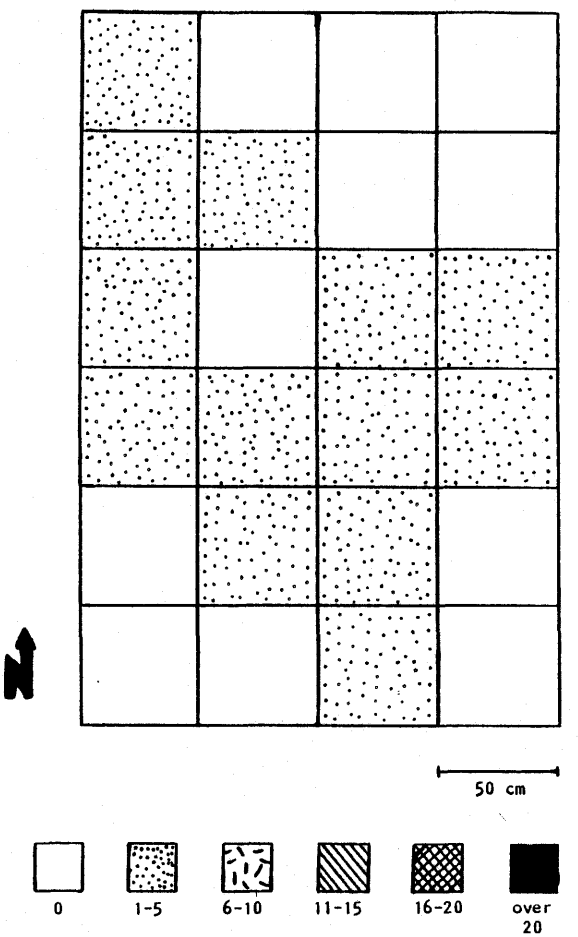


Figure 40: Distribution Density by Number of Secondary Reduction Debitage Level 5, Area B, EeMw-26.

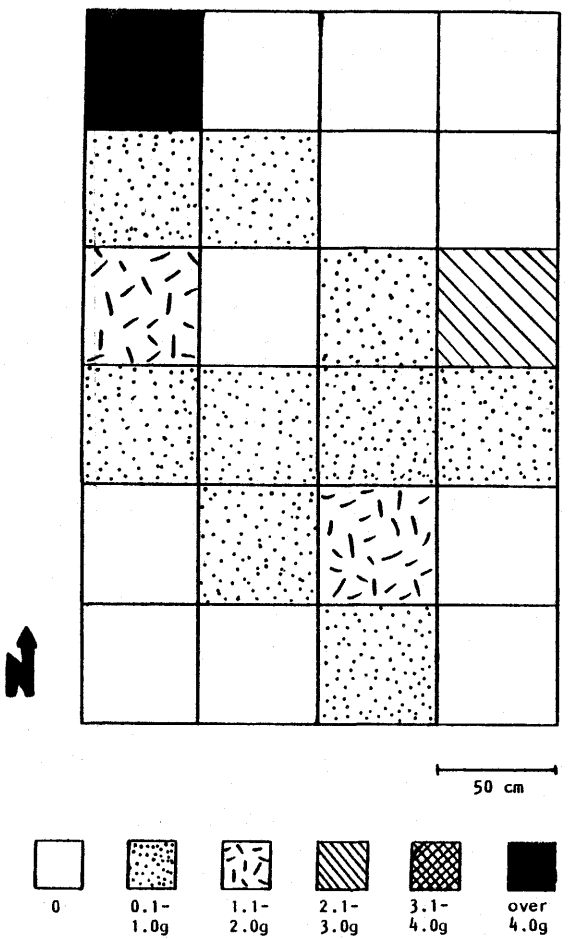


Figure 41: Distribution Density by Weight of Secondary Reduction Debitage Level 5, Area B, EeMw-26.

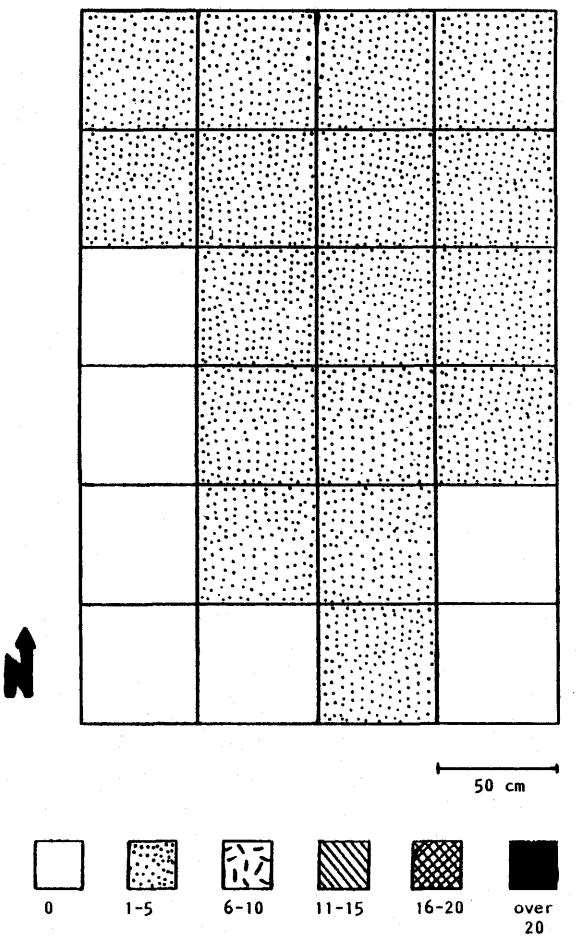


Figure 42: Distribution Density by Number of Fire-Cracked Rock Level 5, Area B, EeMw-26.

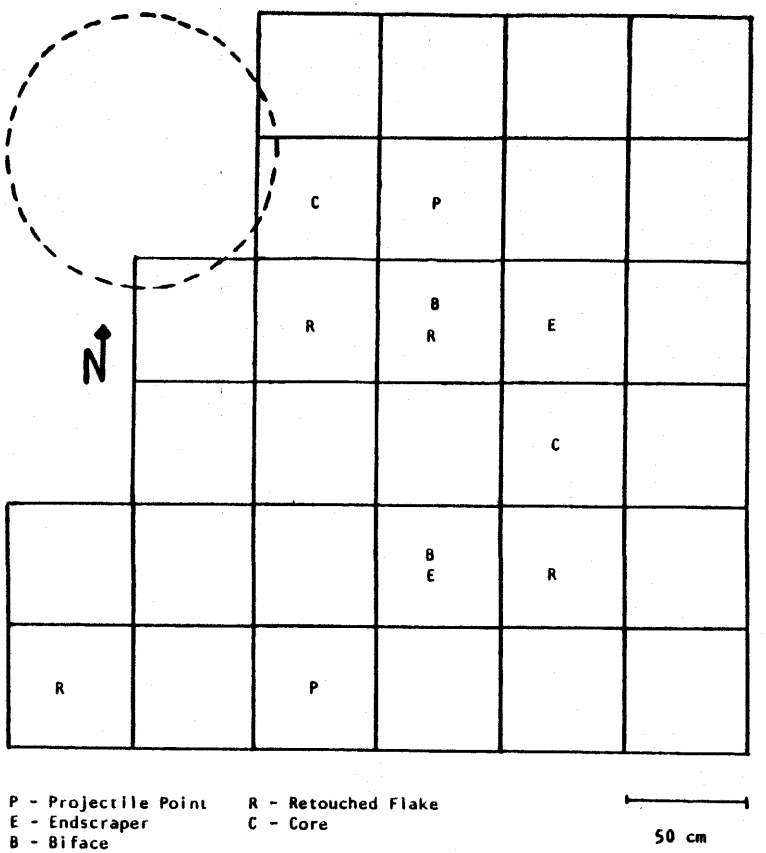


Figure 43: Distribution of Lithic Tools and Lithic Cores Level 4, Sandy Creek, Area A, EeMw-26.

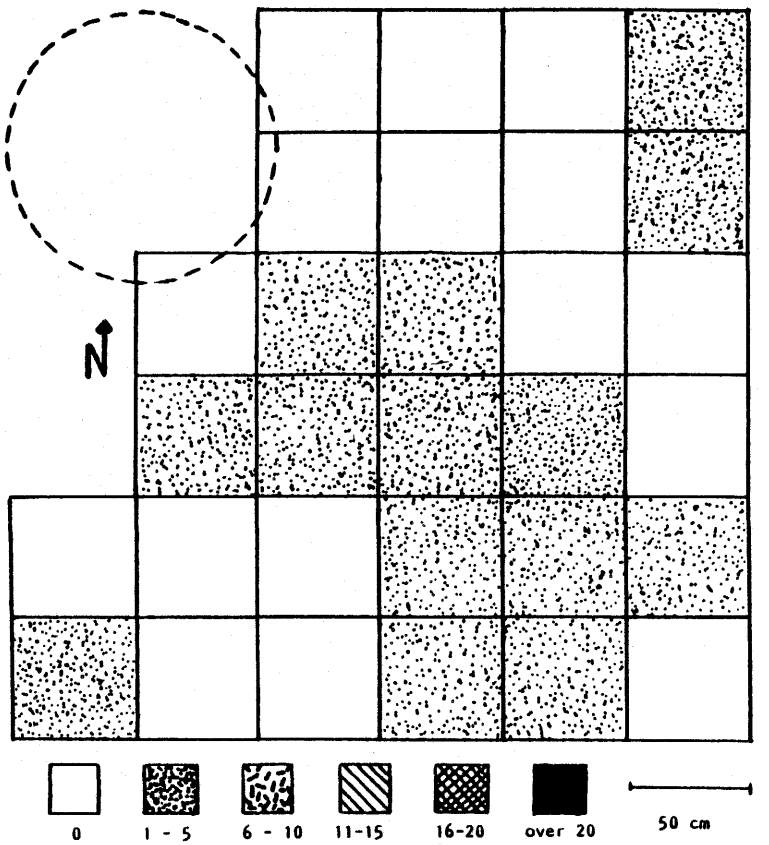


Figure 44: Distribution Density by Number of Primary Reduction Debitage Level 4, Sandy Creek, Area A, EeMw-26.

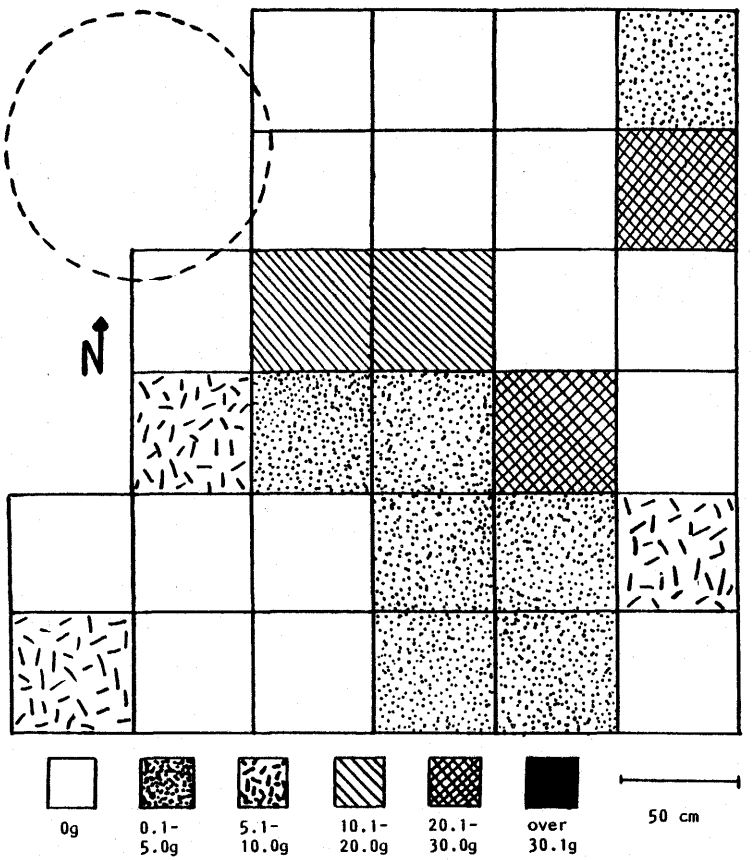


Figure 45 : Distribution Density by Weight of Primary Reduction Debitage, Level 4, Sandy Creek, Area A, EeMw-26.

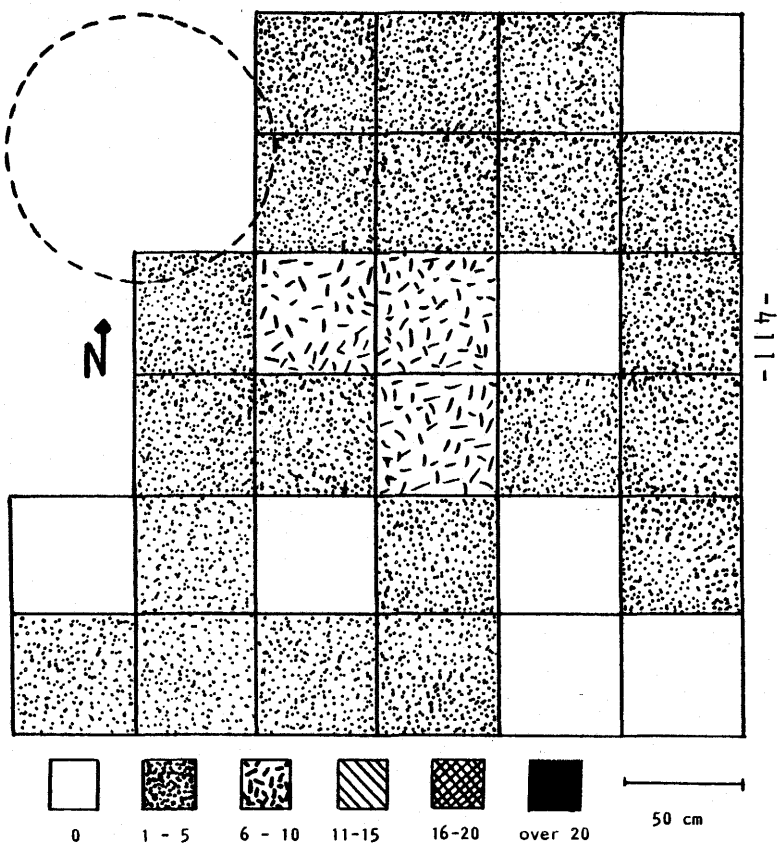


Figure 46 : Distribution Density by Number of Secondary Reduction Debitage Level 4, Sandy Creek, Area A, EeMw-26.

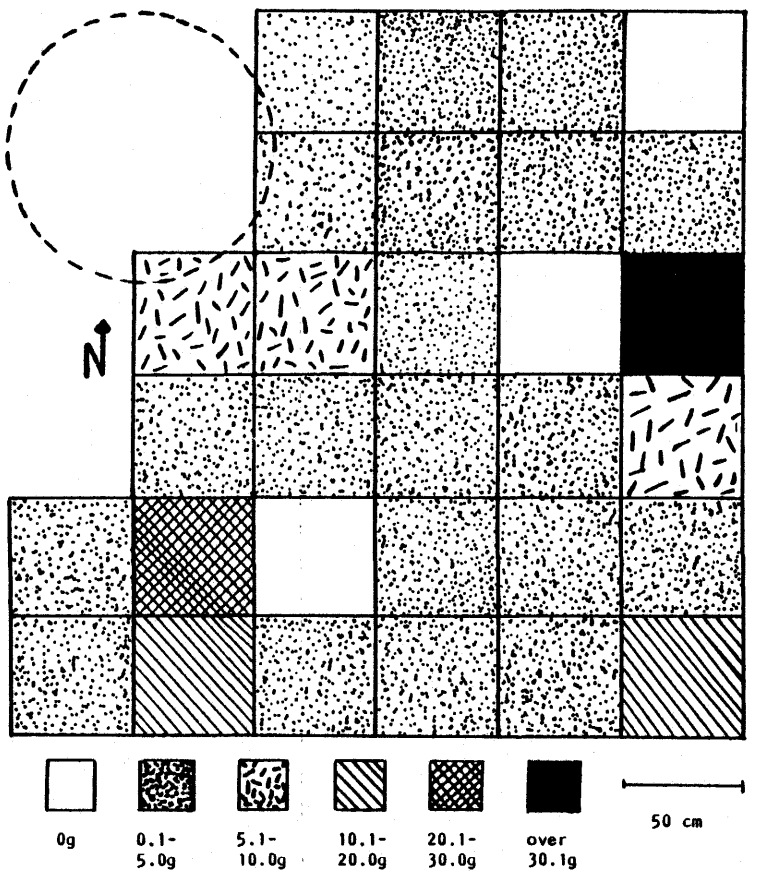


Figure 47: Distribution Density by Weight of Secondary Reduction Debitage Level 4, Sandy Creek, Area A, EeMw-26.

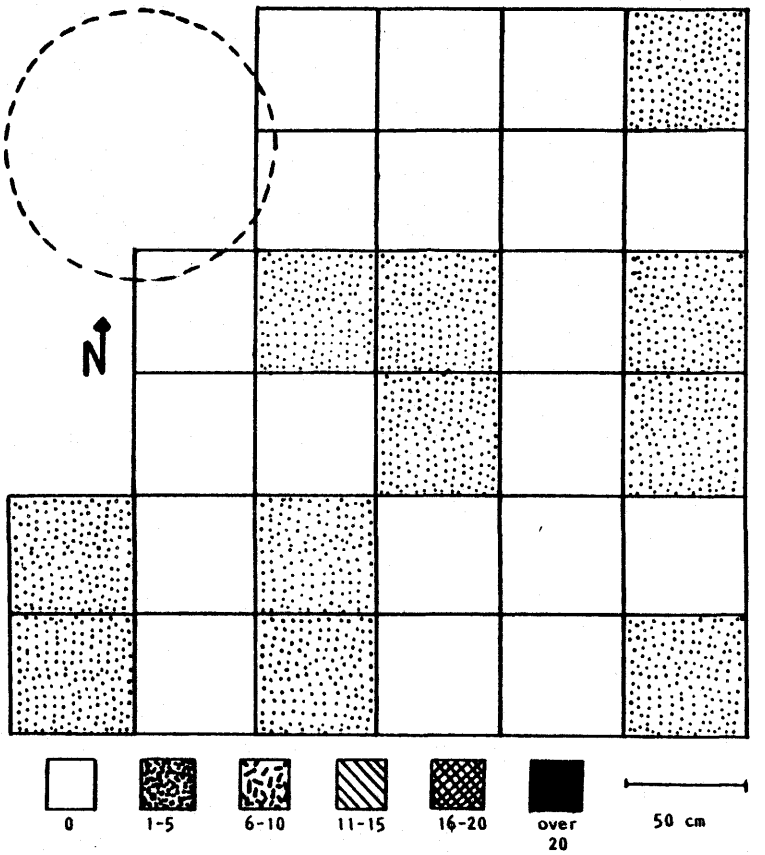
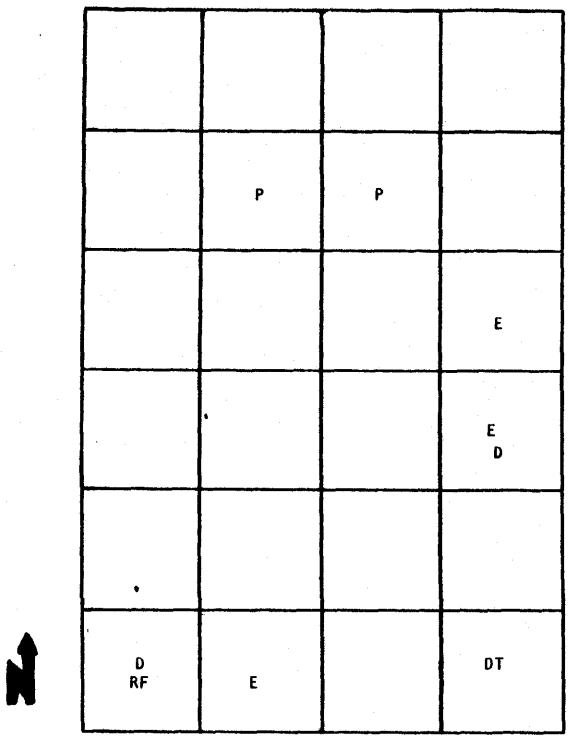


Figure 48: Distribution Density by Number of Fire-Cracked Rock Level 4, Sandy Creek, Area A, EeMw-26.



P - Projectile Point
E - Endscraper
RF - Retouched Flake
D - Drill
DT - Drill Tip

Figure 49: Distribution of Lithic Tools and Lithic Cores Level 6, Sandy Creek, Area B, EeMw-26.

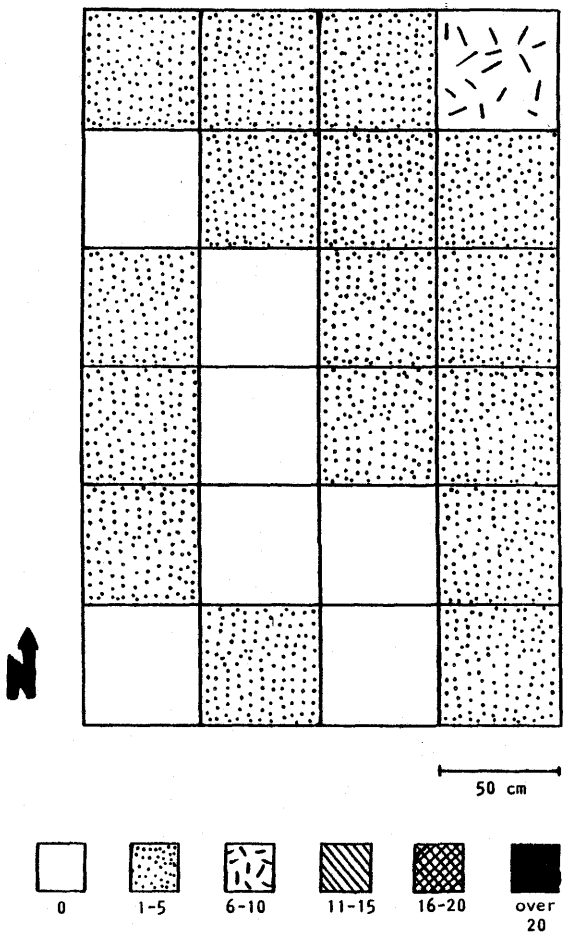


Figure 50: Distribution Density by Number of Primary Reduction Debitage Level 6, Sandy Creek, Area B, EeMw-26.

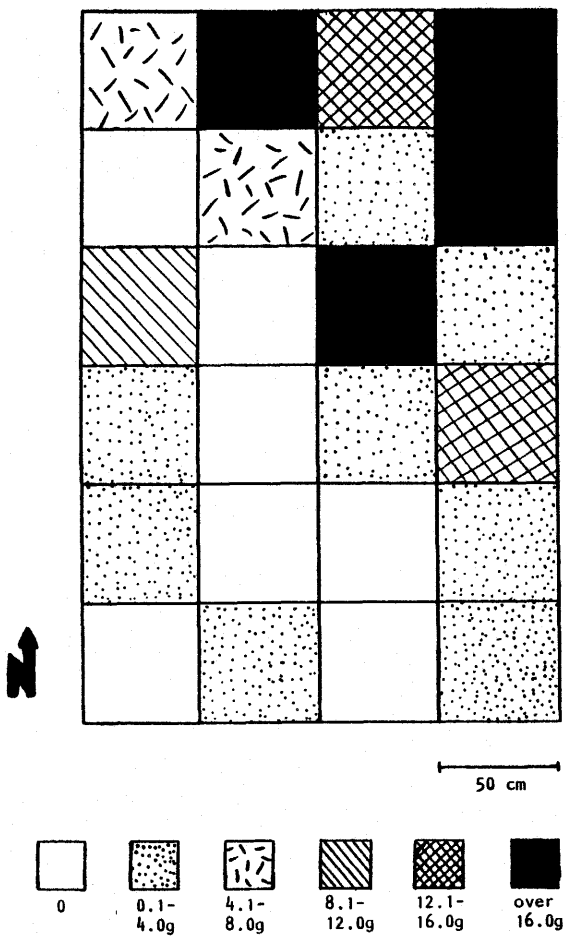


Figure 51: Distribution Density by Weight of Primary Reduction Debitage Level 6, Sandy Creek, Area B, EeMw-26.

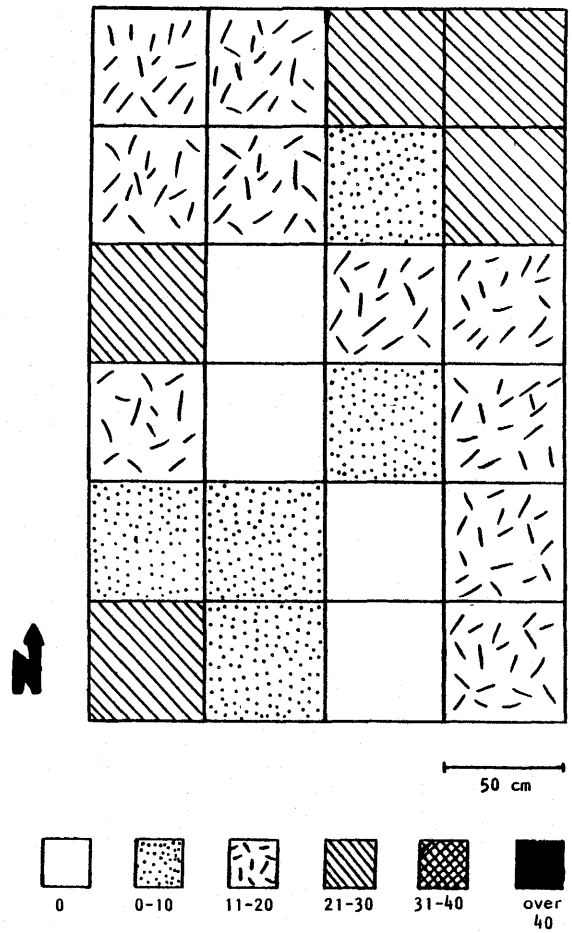


Figure 52: Distribution Density by Number of Secondary Reduction Debitage Level 6, Sandy Creek, Area B, EeMw-26.

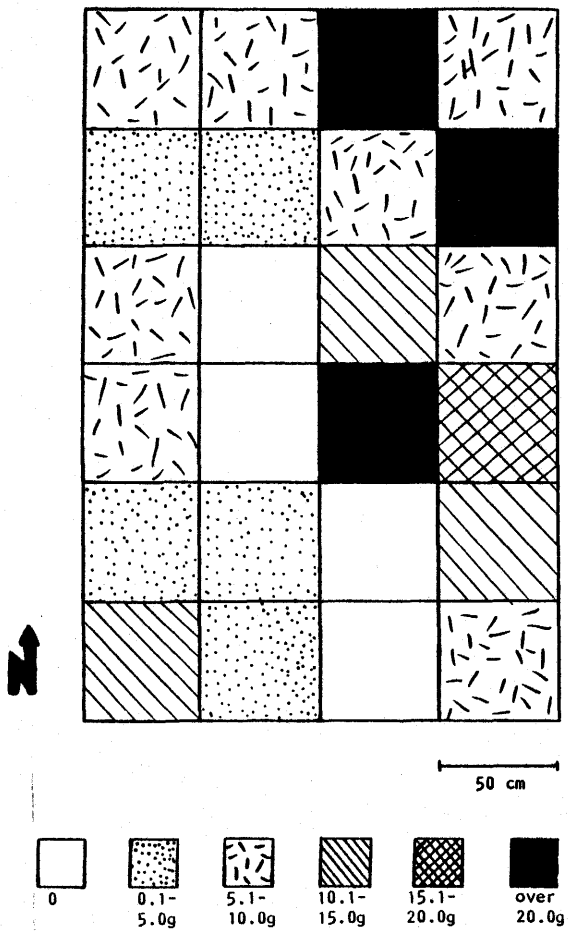


Figure 53 : Distribution Density by Weight of Secondary Reduction Debitage Level 6, Sandy Creek, Area B, EeMw-26.

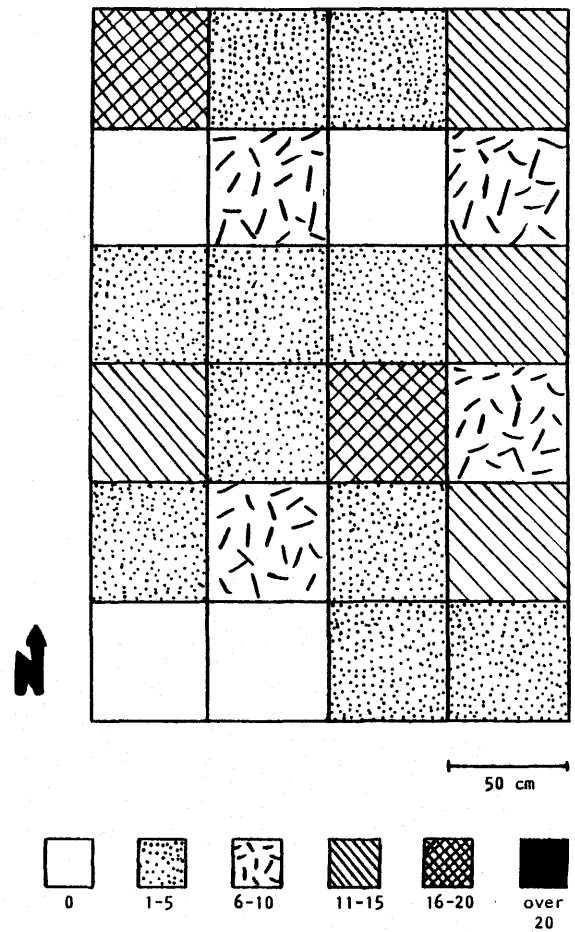
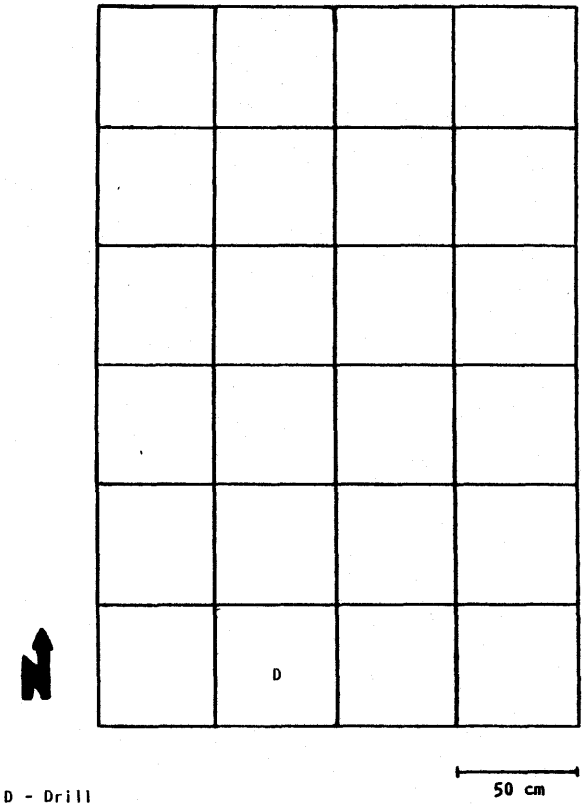


Figure 54: Distribution Density by Number of Fire-Cracked Rock Level 6, Sandy Creek, Area B, EeMw-26.



D - Drill

Figure 55: Distribution of Lithic Tools and Lithic Cores Le
Area B, EeMw-26.

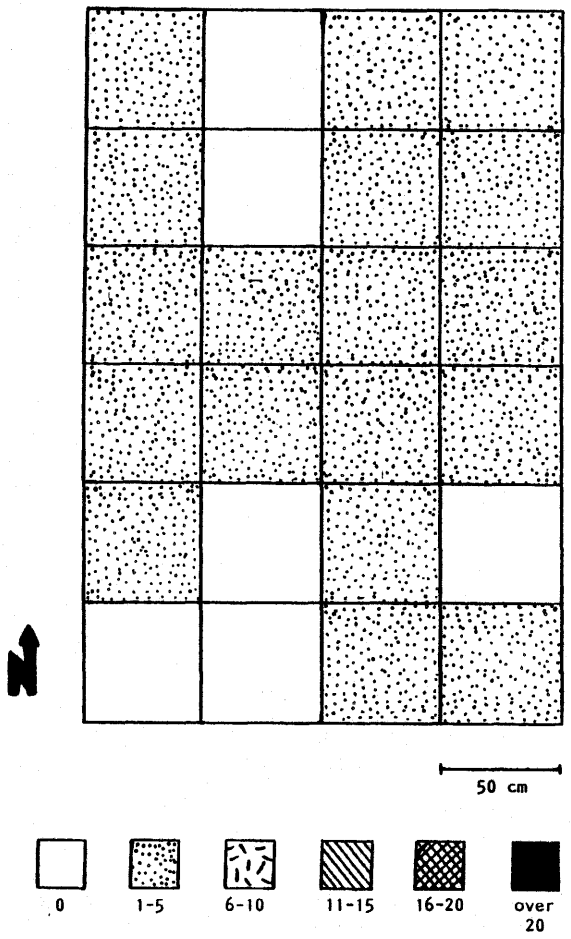


Figure 56: Distribution Density by Number of Primary Reduction
Debitage Level 7, Area B, EeMw-26.

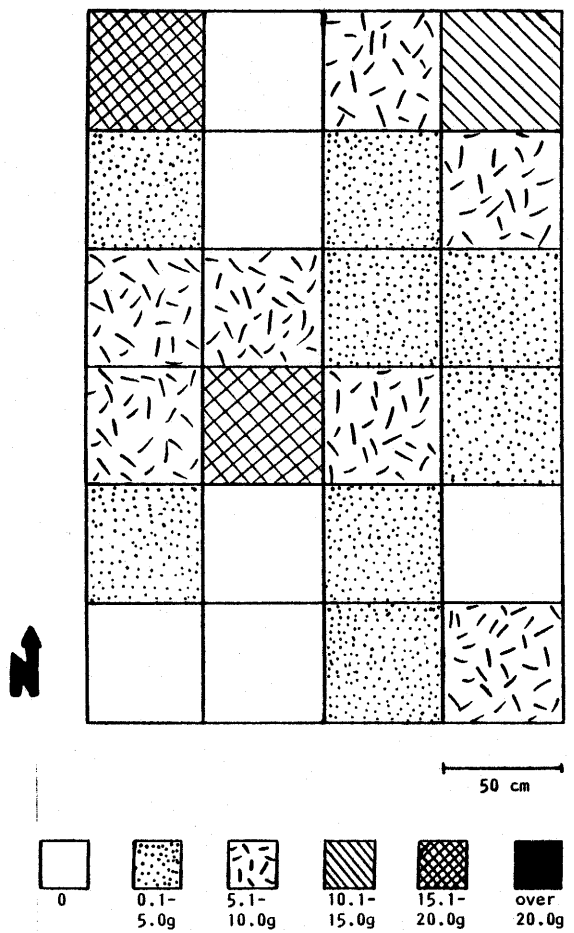


Figure 57: Distribution Density by Weight of Primary Reduction Debitage Level 7, Area B, EeMw-26.

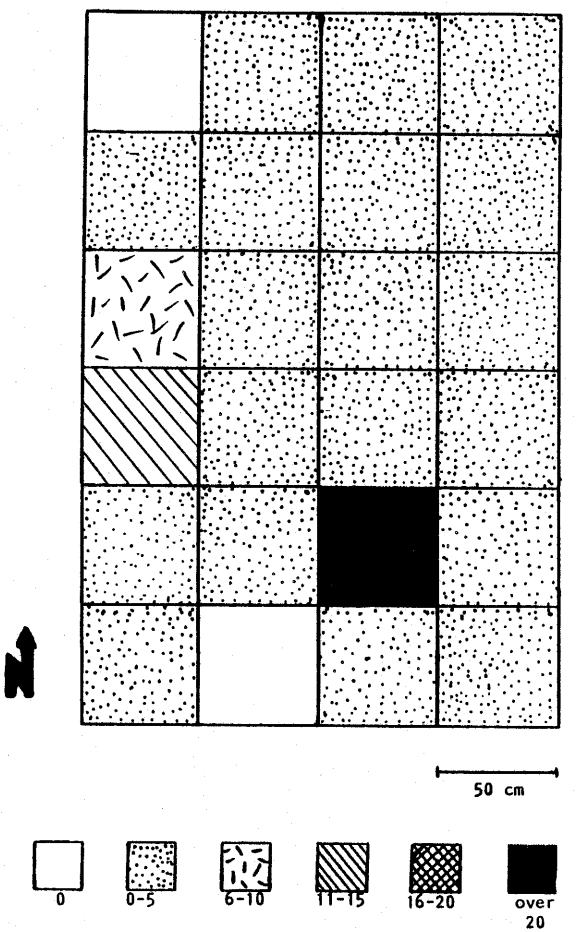


Figure 58: Distribution Density by Number of Secondary Reduction Debitage Level 7, Area B, EeMw-26.

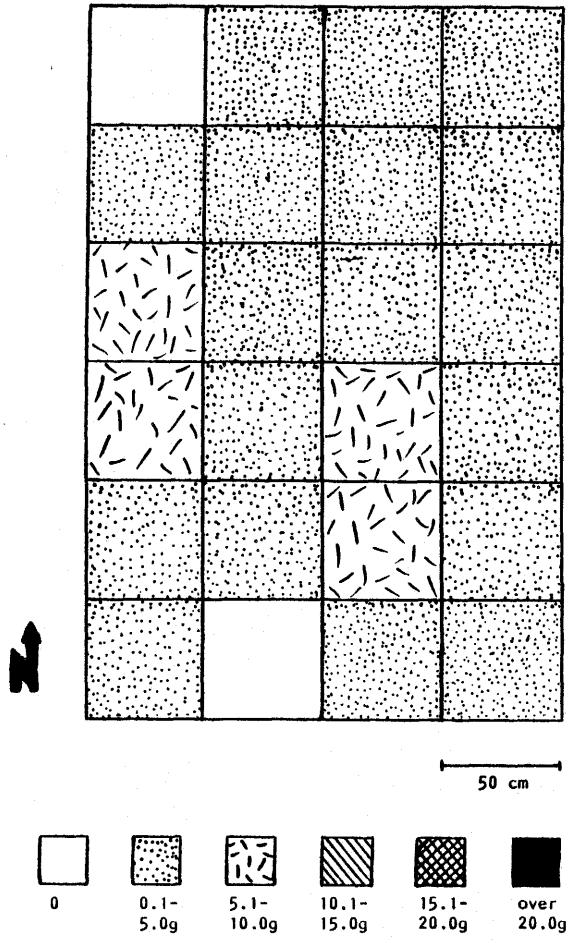


Figure 59: Distribution Density by Weight of Secondary Reduction Debitage Level 7, Area B, EeMw-26.

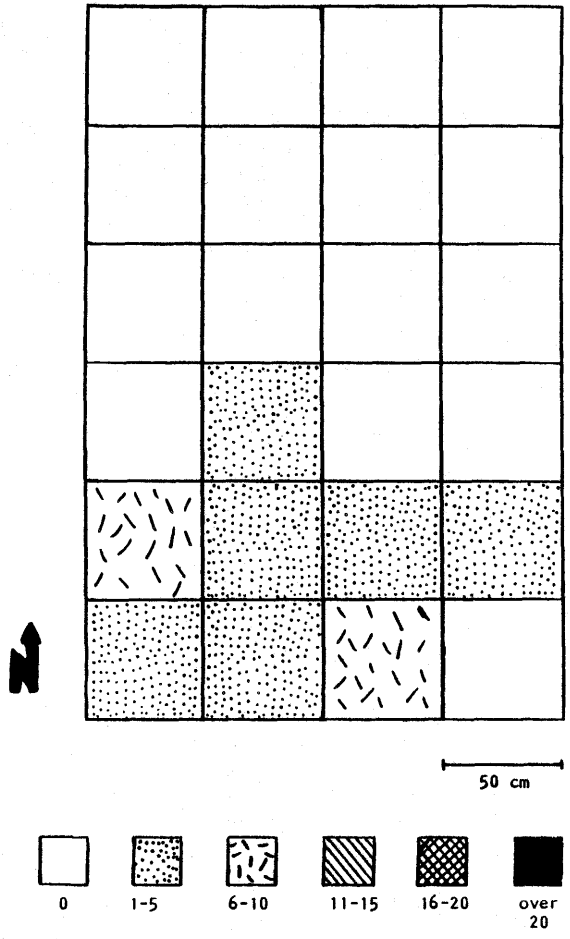


Figure 60: Distribution Density by Number of Fire-Cracked Rock, Level 7, Area B, EeMw-26.

APPENDIX VII

DISTRIBUTION (NUMBER AND WEIGHT) OF FAUNAL REMAINS BY LEVEL

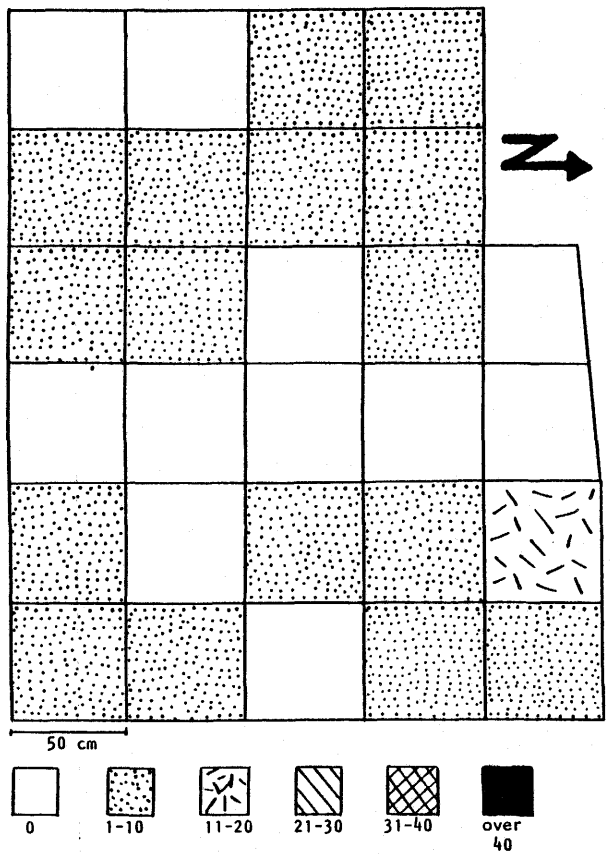


Figure 1 : Distribution Density by Number of Burned Mammal Level 2, Fall River Plains Side-Notched, Area S, EeMw-26.

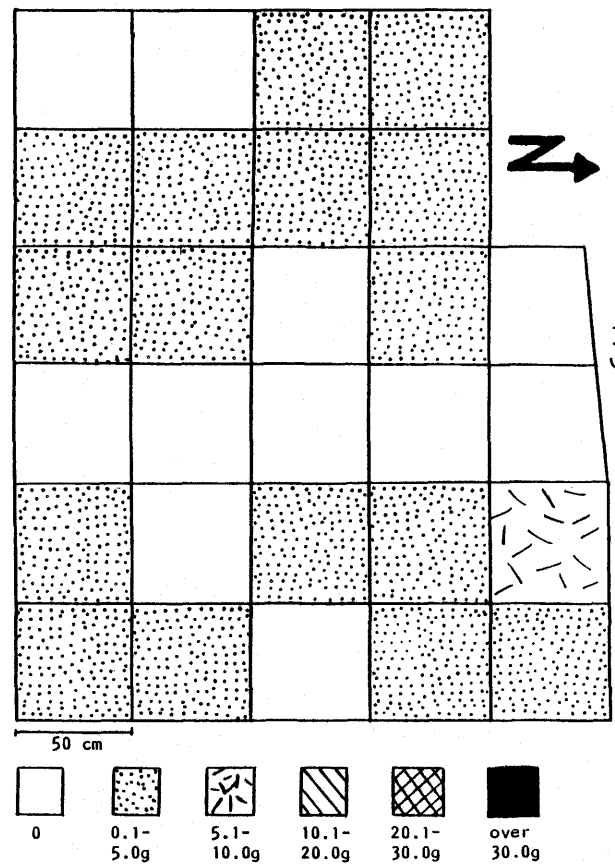


Figure 2 : Distribution Density by Weight of Burned Mammal Level 2, Fall River Plains Side-Notched, Area S, EeMw-26.

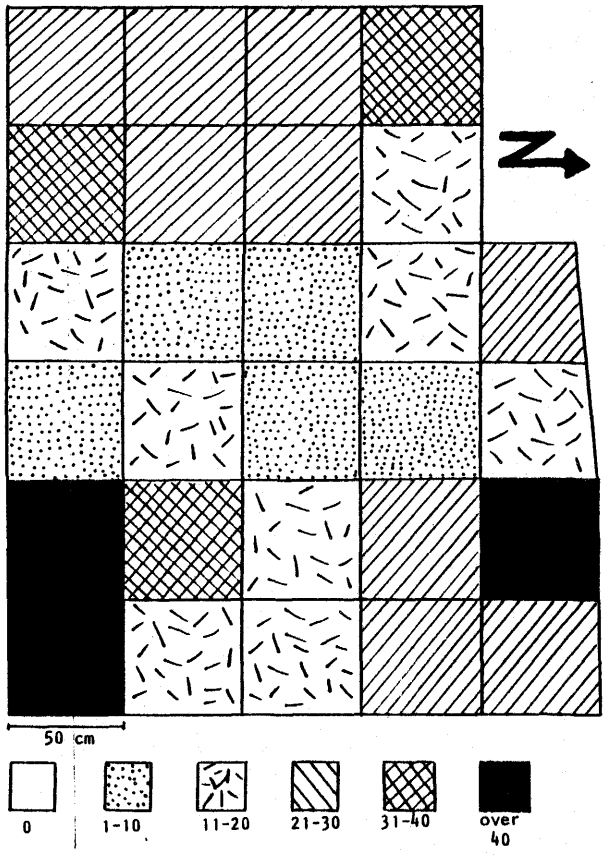


Figure 3 : Distribution Density by Number of Unburned Mammal Level 2, Fall River Plains Side-Notched, Area S, EeMw-26.

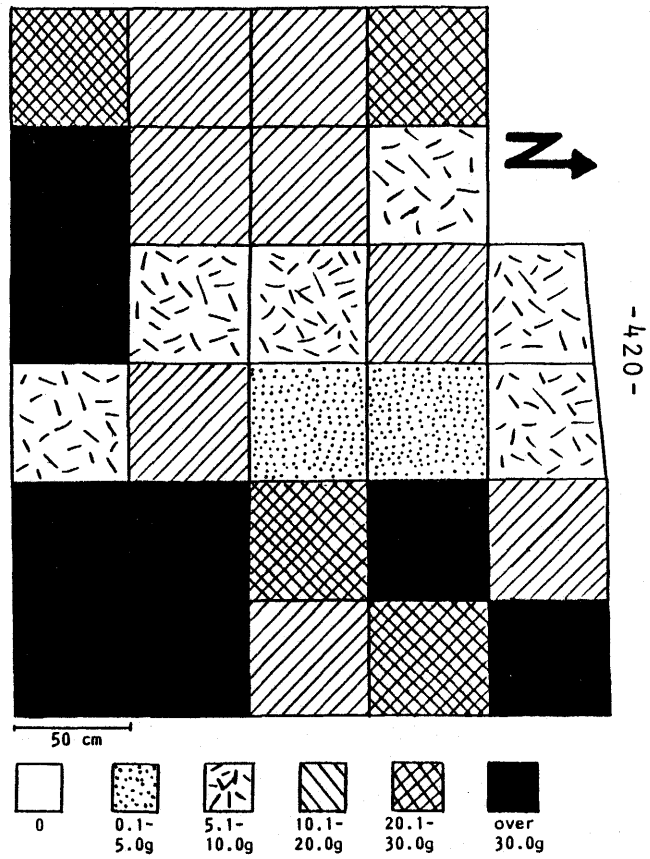


Figure 4 : Distribution Density by Weight of Unburned Mammal Level 2, Fall River Plains Side-Notched, Area S, EeMw-26.

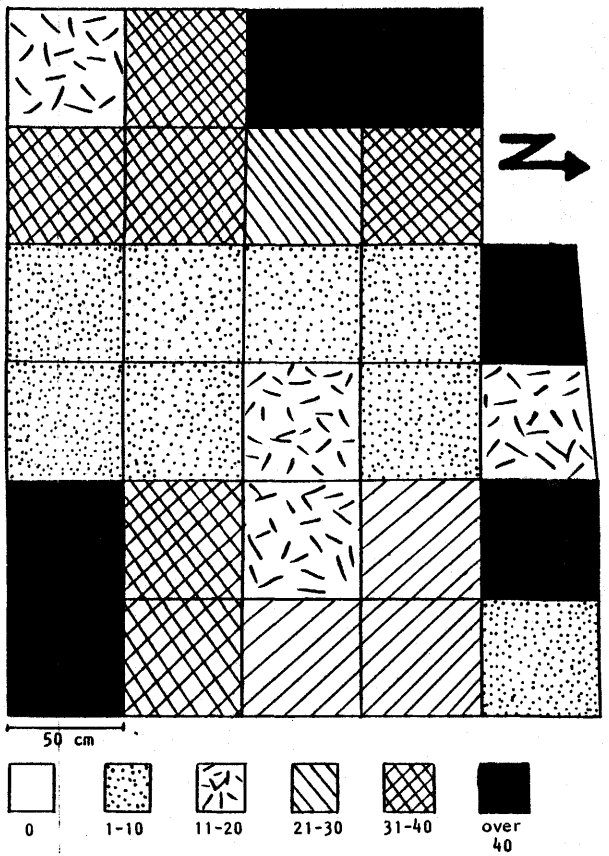


Figure 5 : Distribution Density by Number of Unburned Fish Level 2, Fall River Plains Side-Notched Area S, EeMw-26.

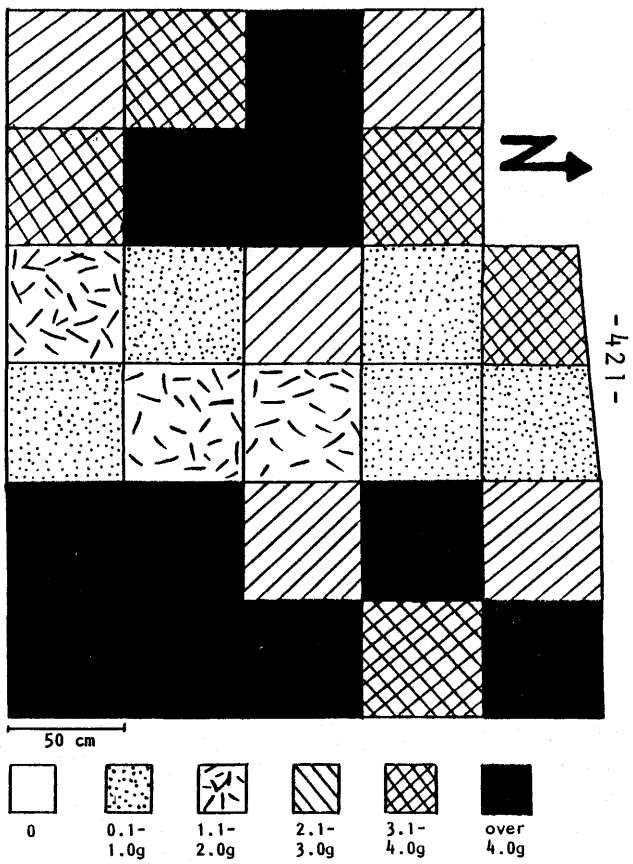


Figure 6 : Distribution Density by Weight of Unburned Fish Level 2, Fall River Plains Side-Notched, Area S, EeMw-26.

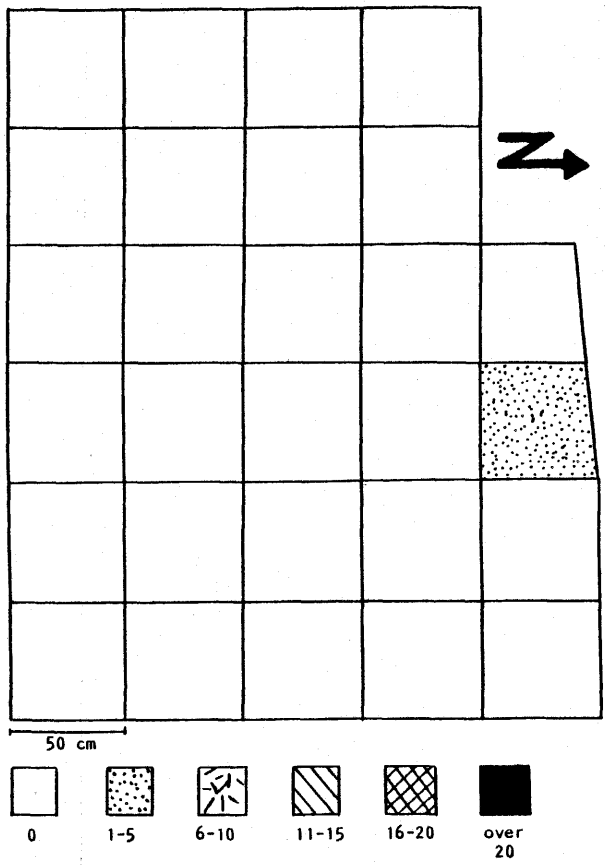


Figure 7 : Distribution Density by Number of Burned Bird Level 2, Fall River Plains Side-Notched, Area S, EeMw-26.

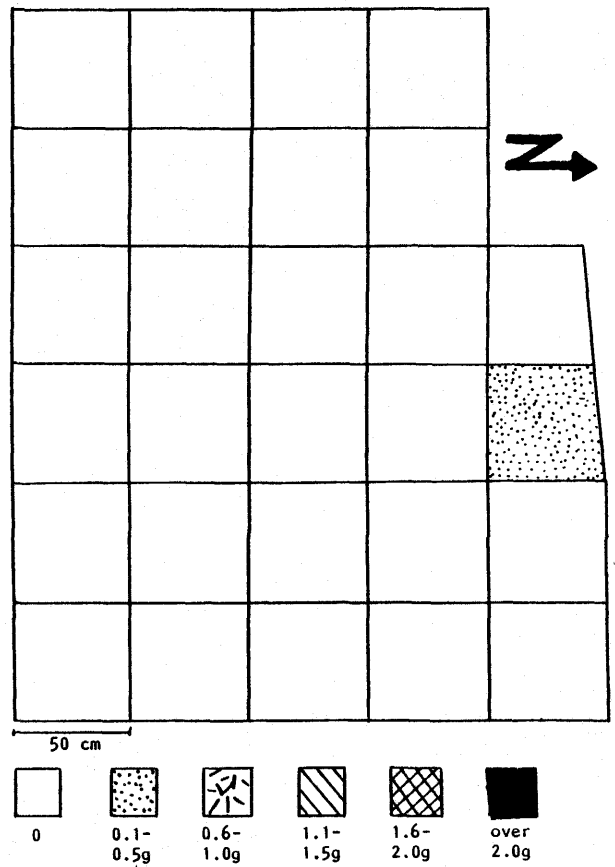


Figure 8 : Distribution Density by Weight of Burned Bird Level 2, Fall River Plains Side-Notched, Area S, EeMw-26.

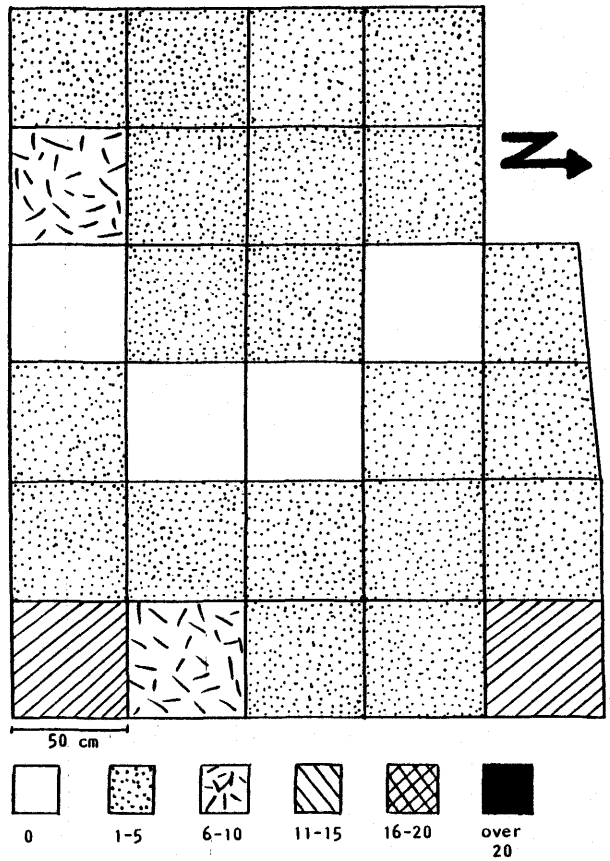


Figure 9 : Distribution Density by Number of Unburned Bird Level 2, Fall River Plains Side-Notched, Area S, EeMw-26.

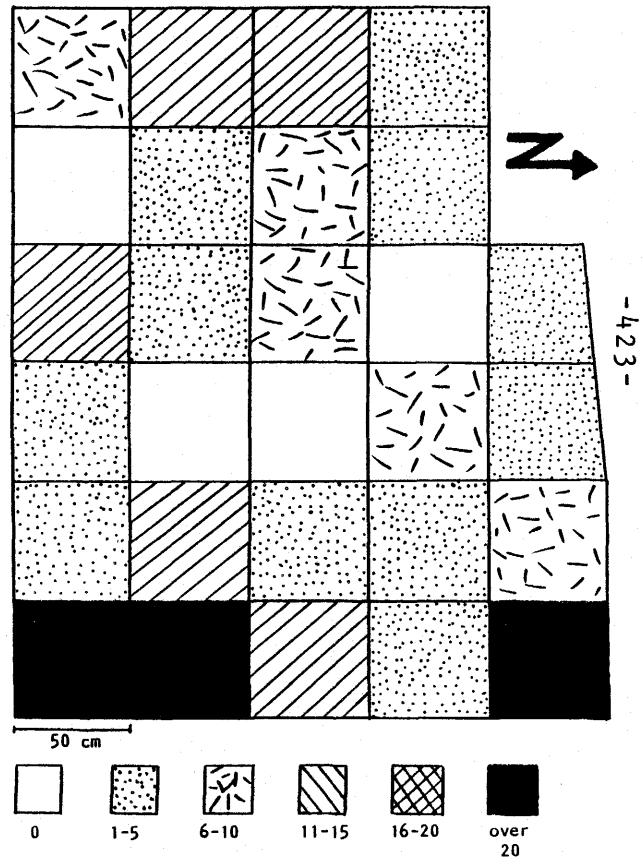


Figure 10 : Distribution Density by Weight of Unburned Bird Level 2, Fall River Plains Side-Notched, Area S, EeMw-26.

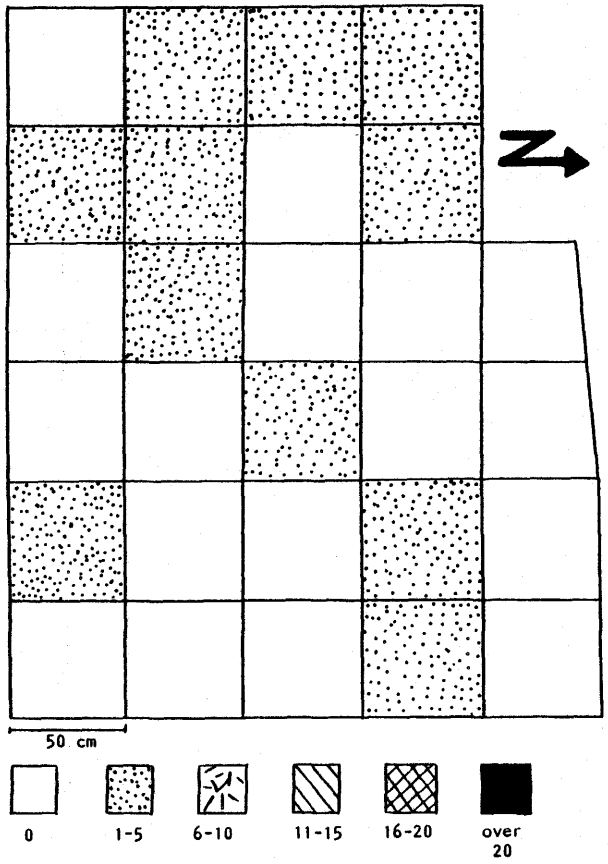


Figure 11: Distribution Density by Number of Unburned and Burned Freshwater Clam Shell Level 2, Fall River Plains Side-Notched, Area S, EeMw-26.

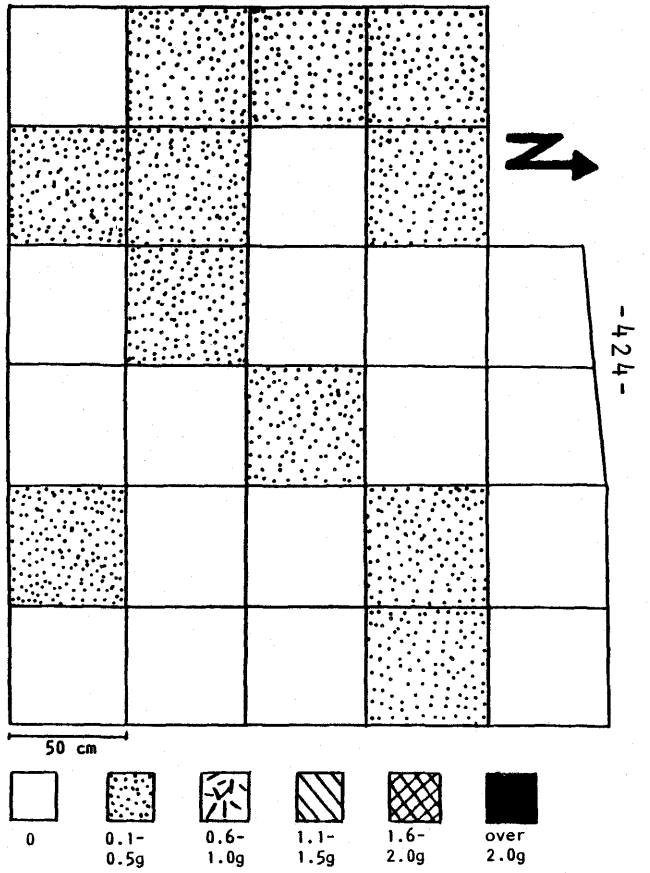


Figure 12: Distribution Density by Weight of Unburned and Burned Freshwater Clam Shell Level 2, Fall River Plains Side-Notched, Area S, EeMw-26.

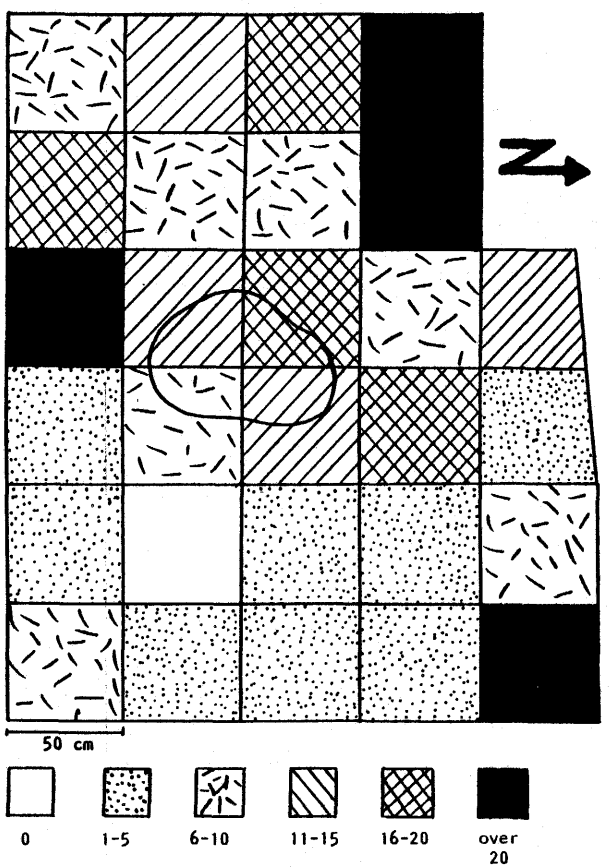


Figure 13: Distribution Density by Number of Burned Mammal Level 3, Late Prairie or Plains Side-Notched, Area S, EeMw-26.

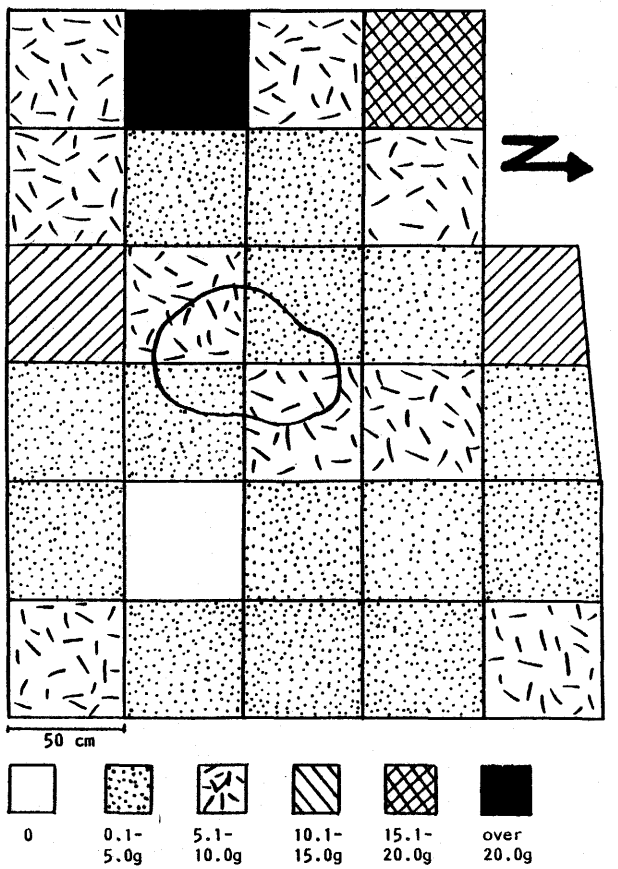


Figure 14: Distribution Density by Weight of Burned Mammal Level 3, Late Prairie or Plains Side-Notched, Area S, EeMw-26.

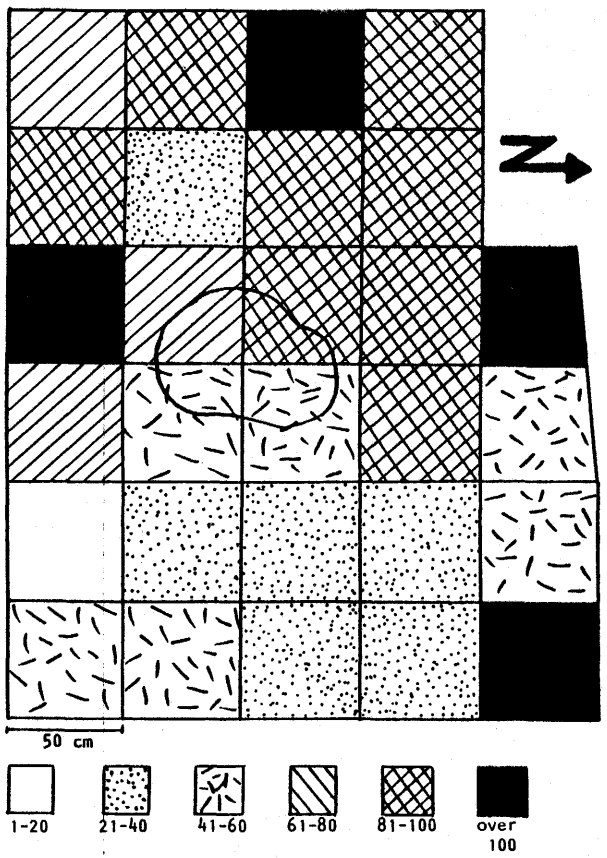


Figure 15: Distribution Density by Number of Unburned Mammal Level 3, Late Prairie or Plains Side-Notched, Area S, EeMw-26.

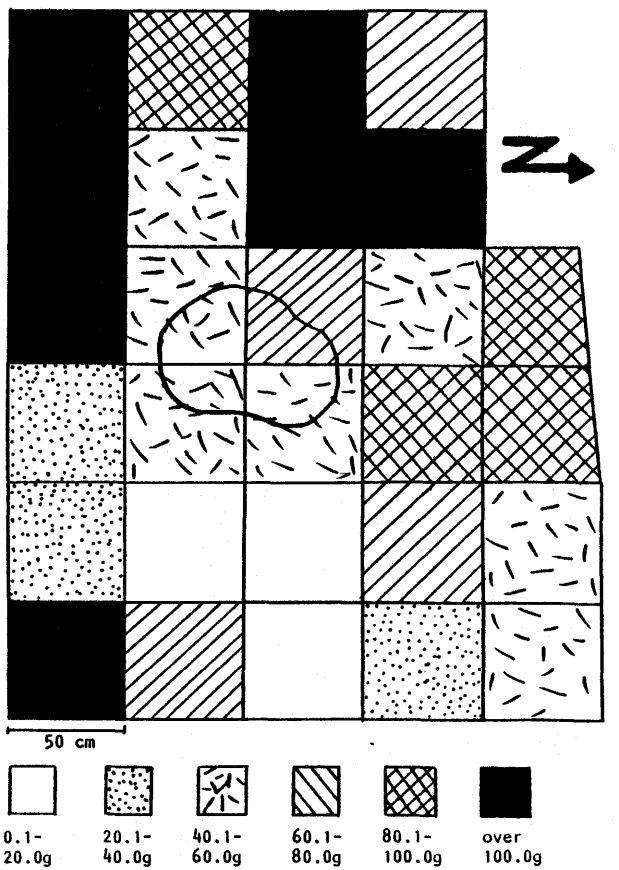


Figure 16: Distribution Density by Weight of Unburned Mammal Level 3, Late Prairie or Plains Side-Notched, Area S, EeMw-26.

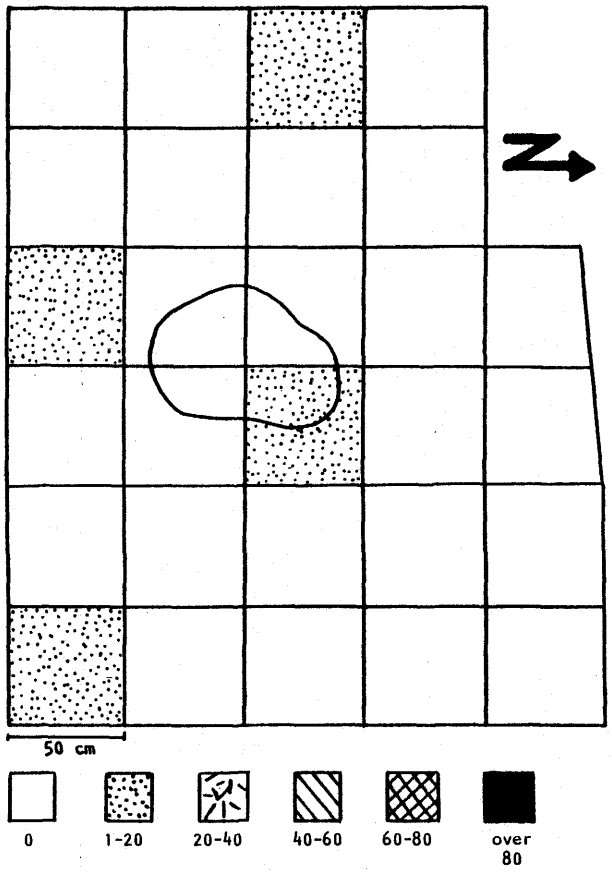


Figure 17: Distribution Density by Number of Burned Fish Level 3, Late Prairie or Plains Side-Notched, Area S, EeMw-26.

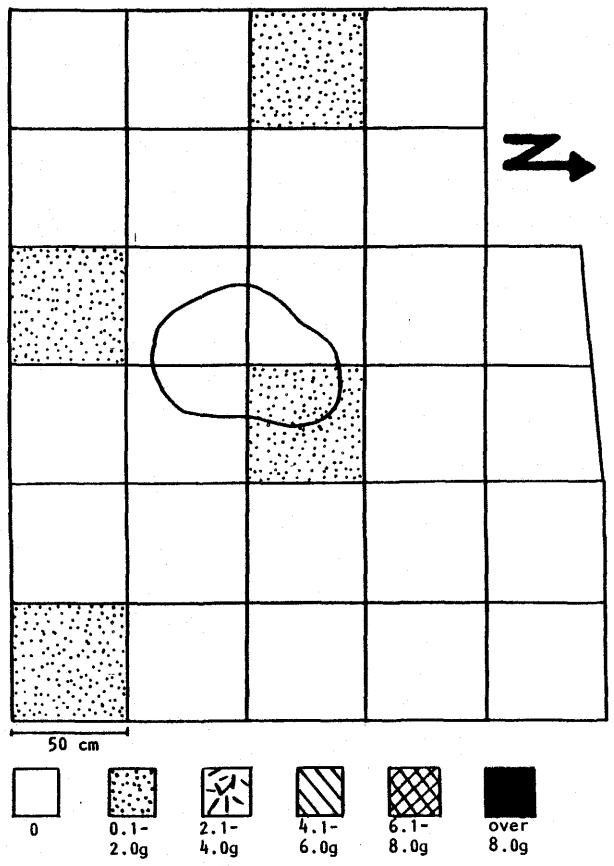


Figure 18: Distribution Density by Weight of Burned Fish Level 3, Late Prairie or Plains Side-Notched, Area S, EeMw-26.

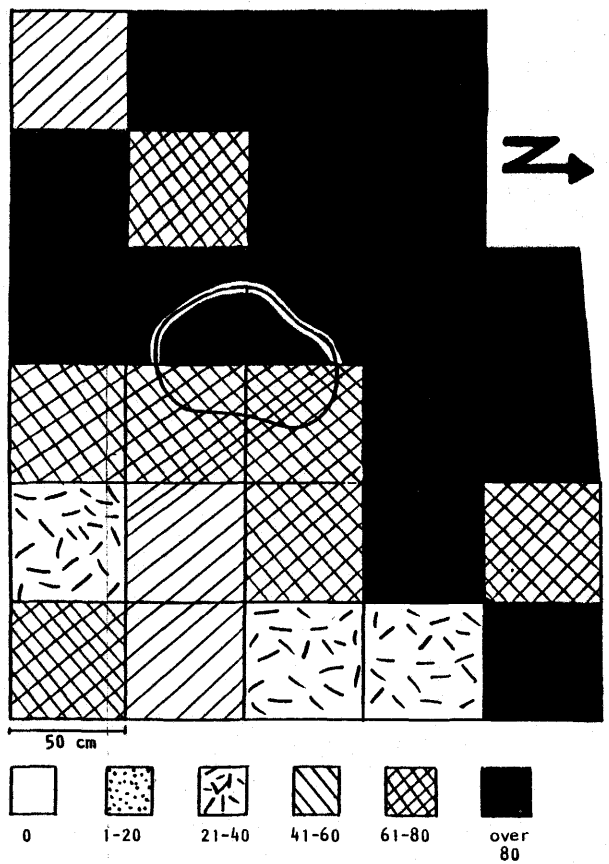


Figure 19: Distribution Density by Number of Unburned Fish Level 3, Late Prairie or Plains Side-Notched, Area S, EeMw-26.

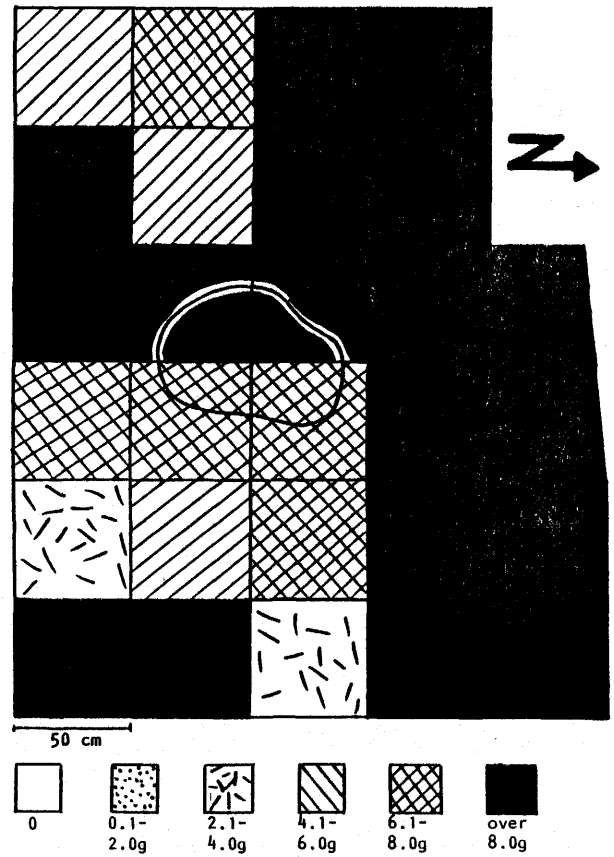


Figure 20: Distribution Density by Weight of Unburned Fish Level 3, Late Prairie or Plains Side-Notched, Area S, EeMw-26.

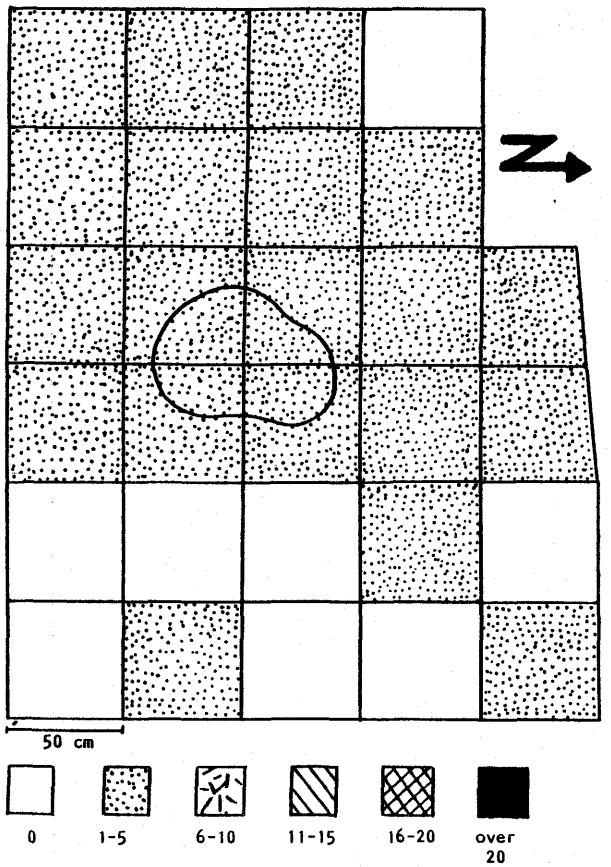


Figure 21: Distribution Density by Number of Unburned Bird Level 3, Late Prairie or Plains Side-Notched, Area S, EeMw-26.

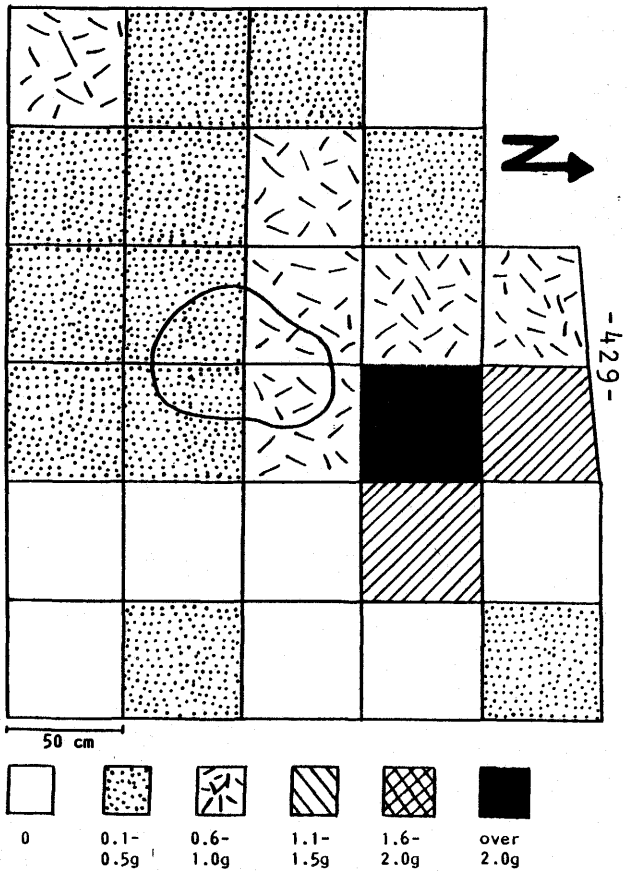


Figure 22: Distribution Density by Weight of Unburned Bird Level 3, Late Prairie or Plains Side-Notched, Area S, EeMw-26.

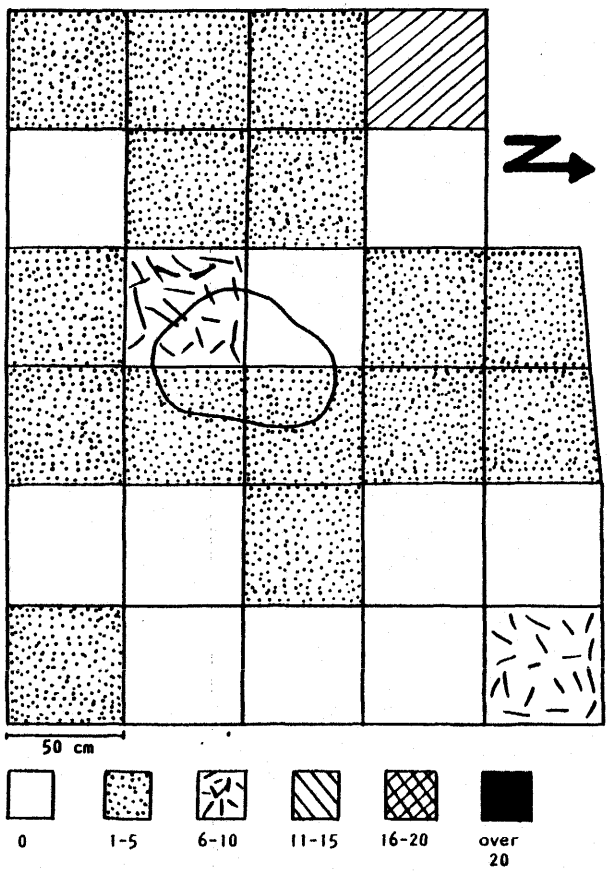


Figure 23: Distribution Density by Number of Unburned and Burned Freshwater Clam Shell Level 3, Late Prairie or Plains Side-Notched, Area S, EeMw-26.

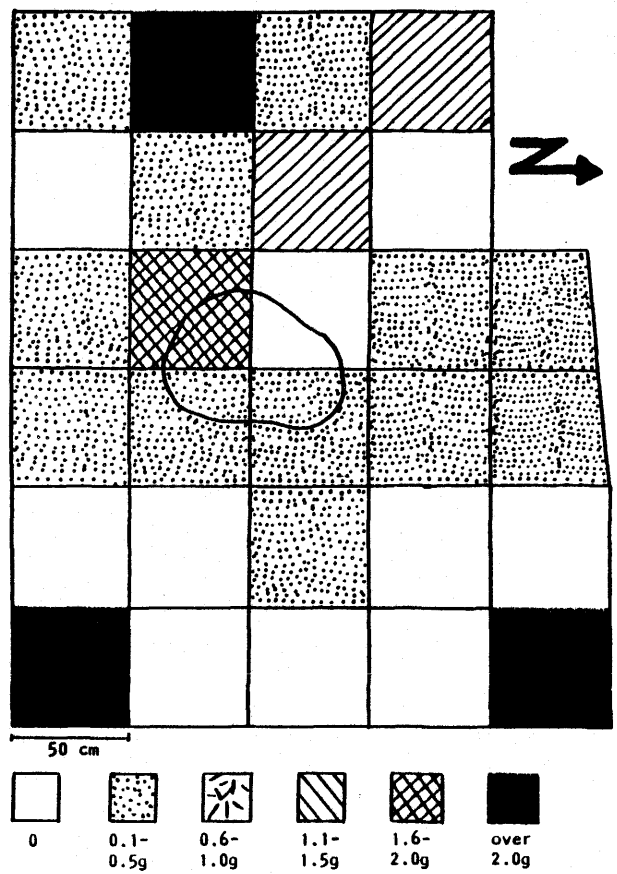


Figure 24: Distribution Density by Weight of Unburned and Burned Freshwater Clam Shell Level 3, Late Prairie or Plains Side-Notched, Area S, EeMw-26.

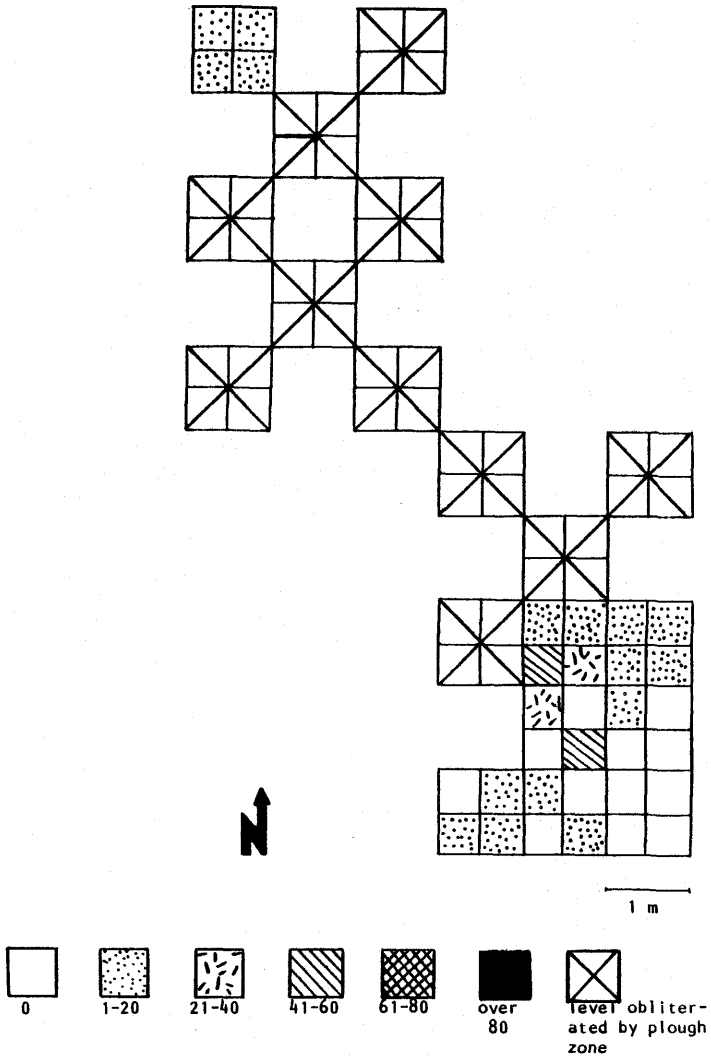


Figure 25: Distribution Density by Number of Burned Mammal Level 2A, Prairie Side-Notched, Area B, EeMw-26.

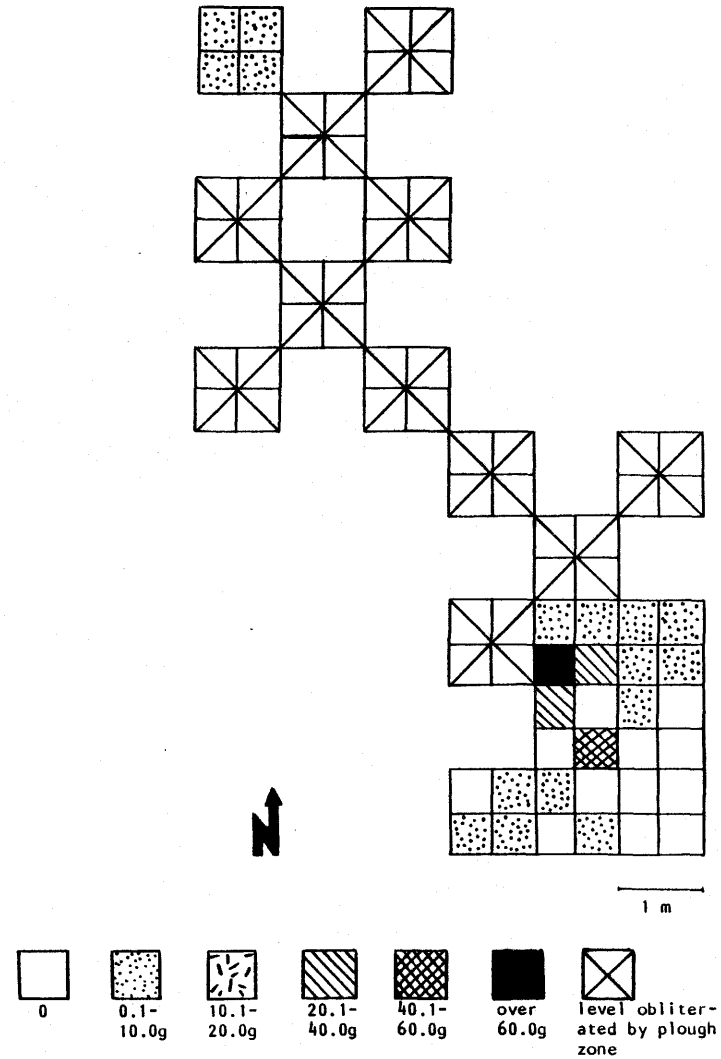


Figure 26: Distribution Density by Weight of Burned Mammal Level 2A, Prairie Side-Notched, Area B, EeMw-26.

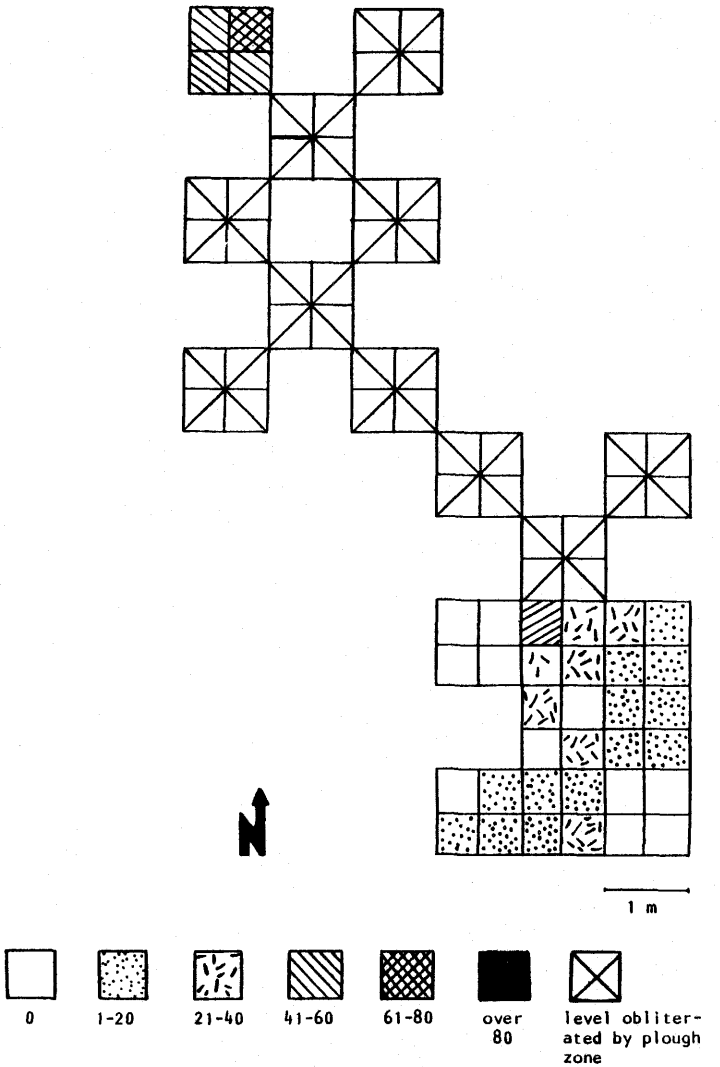


Figure 27 : Distribution Density by Number of Unburned Mammal Level 2A, Prairie Side-Notched, Area B, EeMw-26.

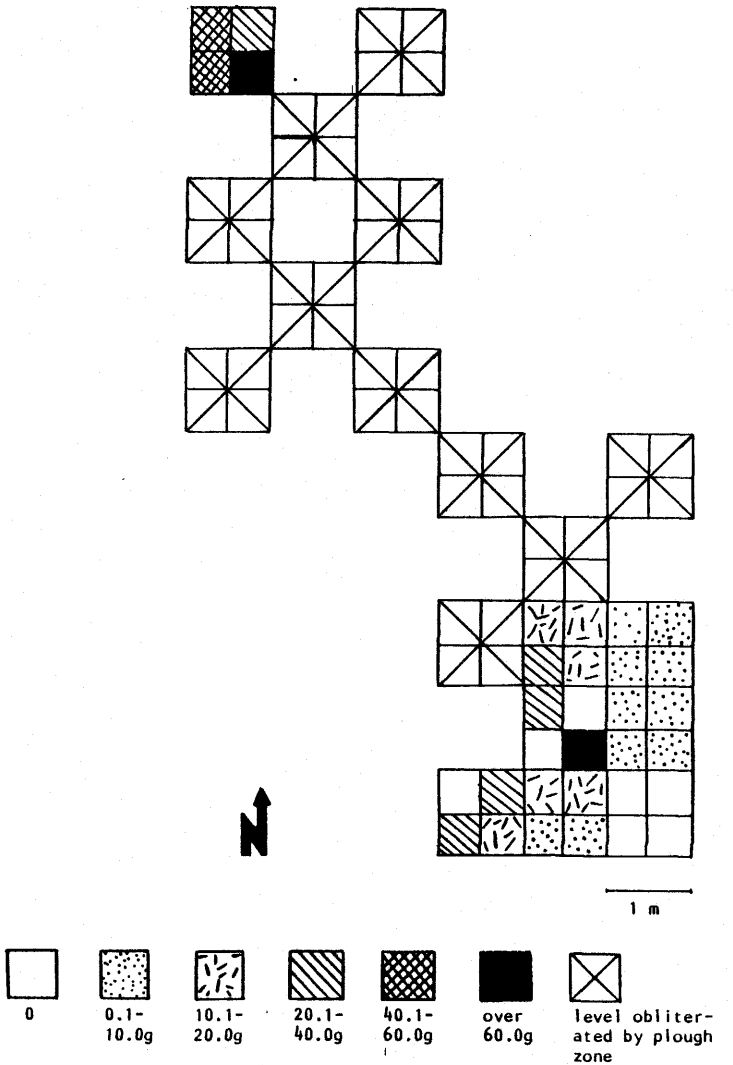


Figure 28 : Distribution Density by Weight of Unburned Mammal Level 2A, Prairie Side-Notched, Area B, EeMw-26.

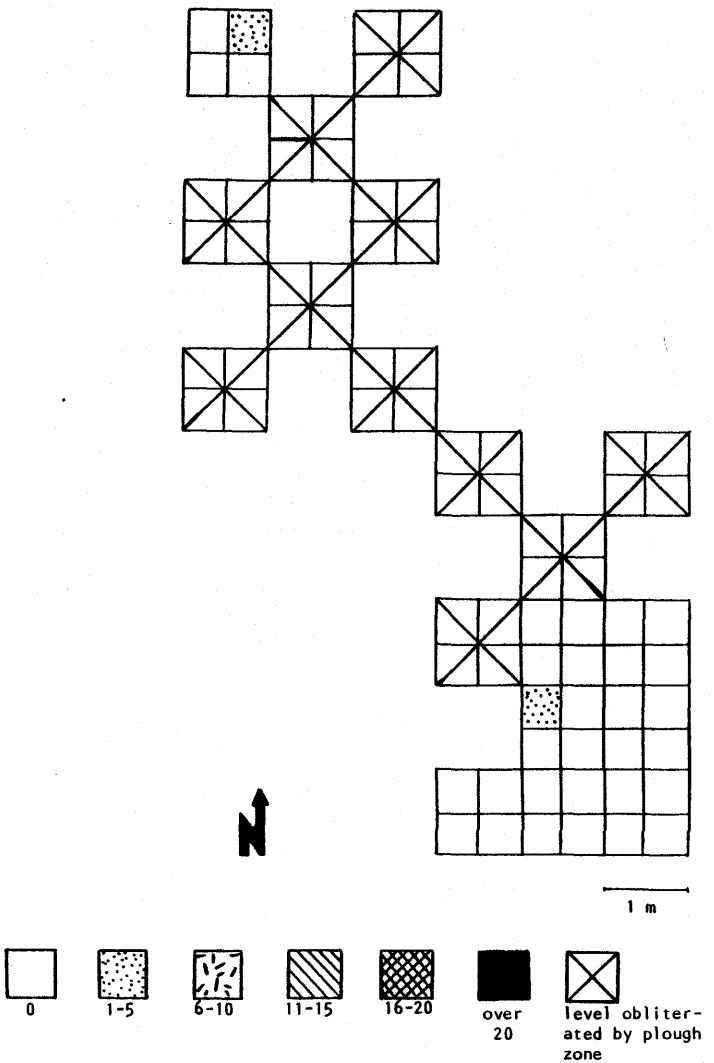


Figure 29: Distribution Density by Number of Burned Fish Level 2A, Prairie Side-Notched, Area B, EeMw-26.

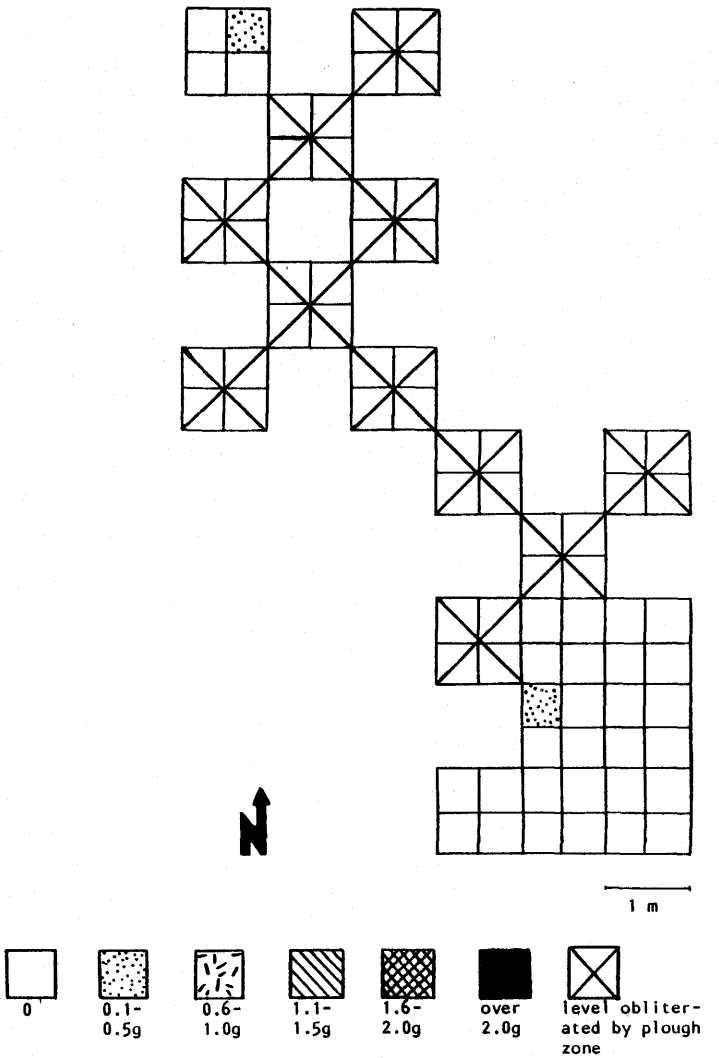


Figure 30: Distribution Density by Weight of Burned Fish Level 2A, Prairie Side-Notched, Area B, EeMw-26.

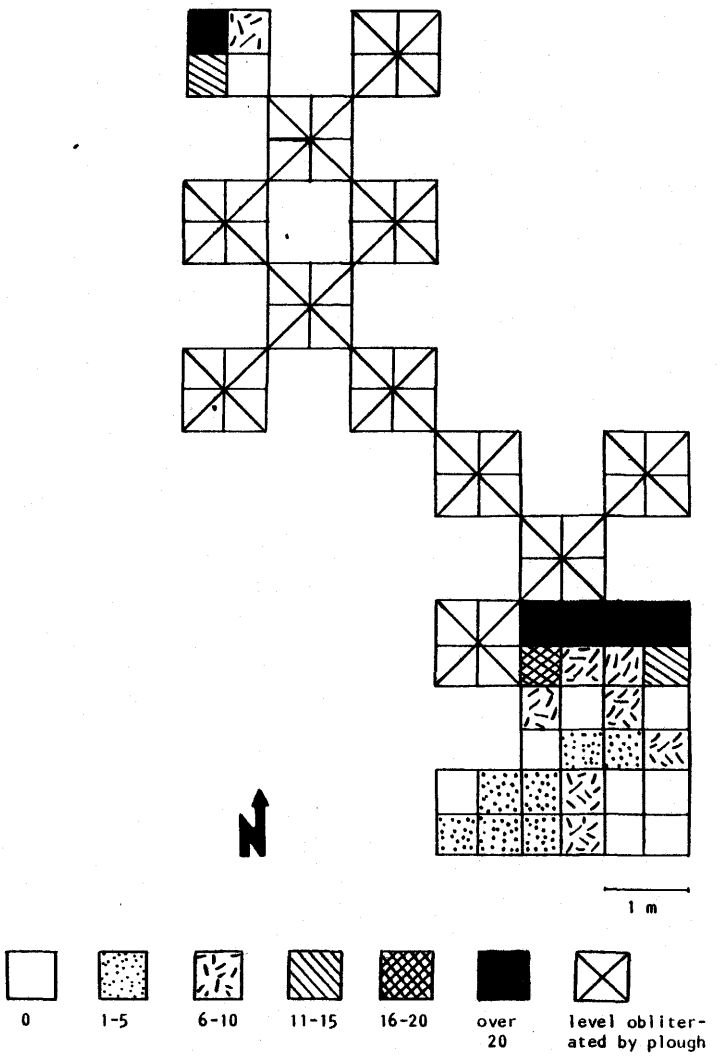


Figure 31: Distribution Density by Number of Unburned Fish Level 2A, Prairie Side-Notched, Area B, EeMw-26.

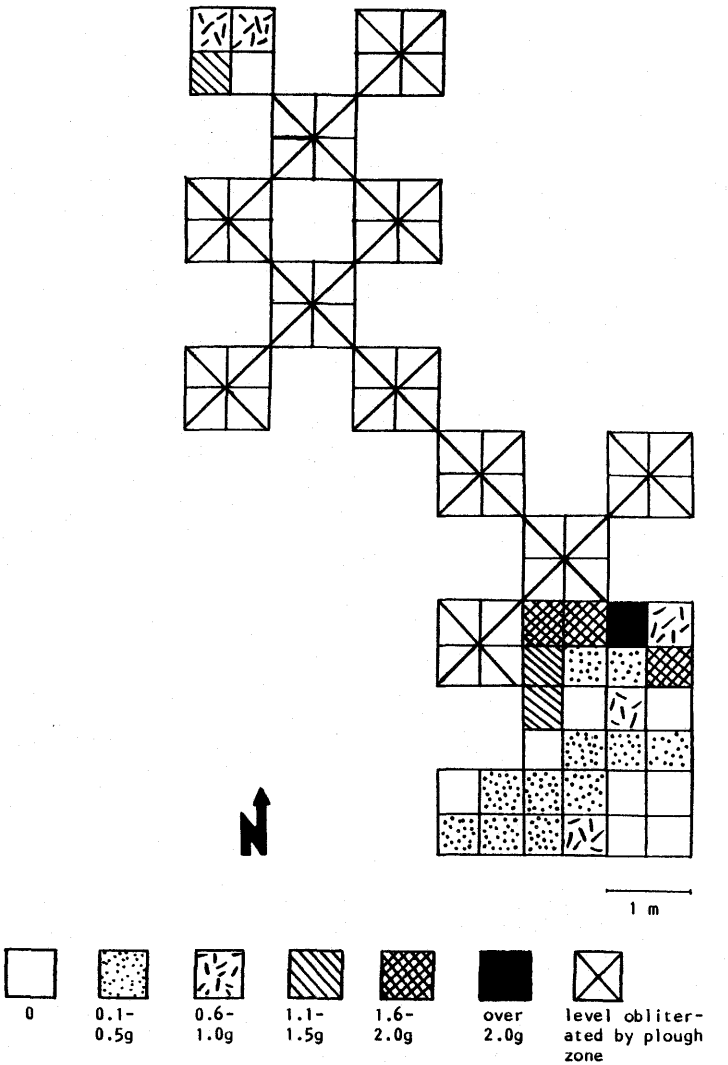


Figure 32: Distribution Density by Weight of Unburned Fish Level 2A, Prairie Side-Notched, Area B, EeMw-26.

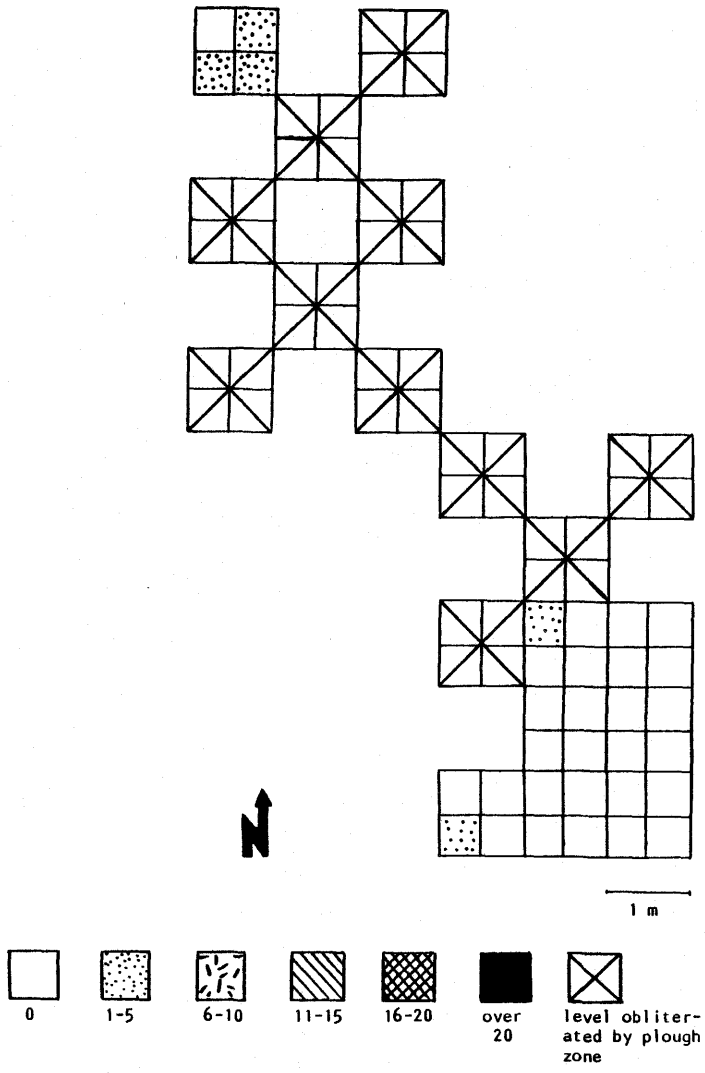


Figure 33: Distribution Density by Number of Unburned Bird Level 2A, Prairie Side-Notched, Area B, EeMw-26.

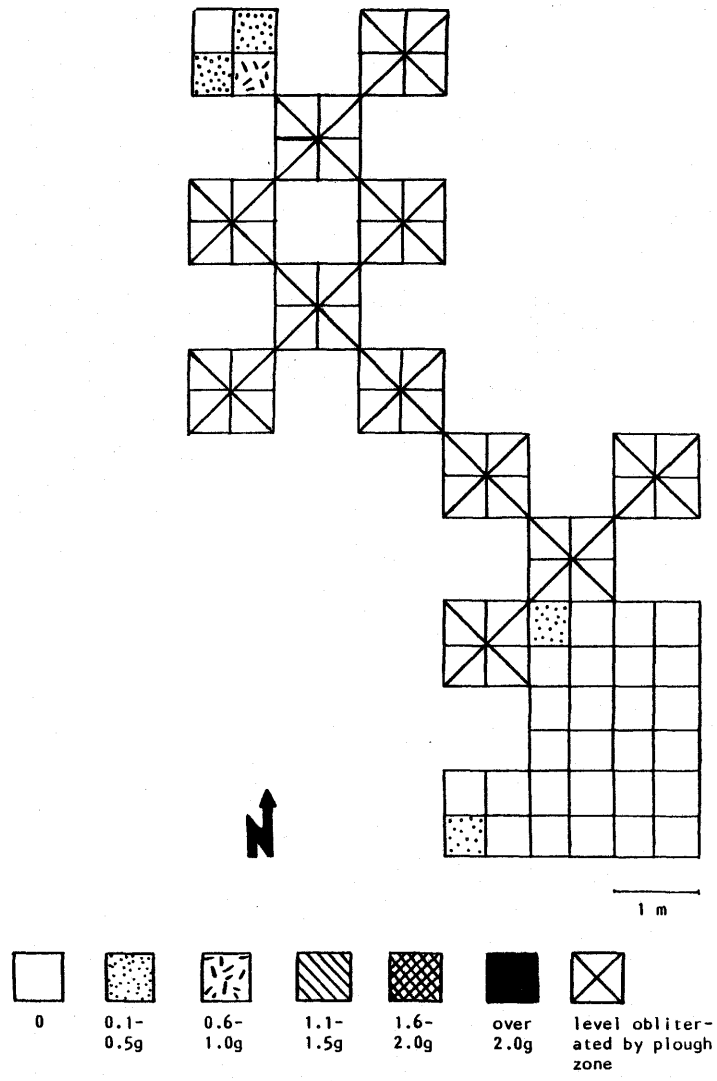


Figure 34: Distribution Density by Weight of Unburned Bird Level 2A, Prairie Side-Notched, Area B, EeMw-26.

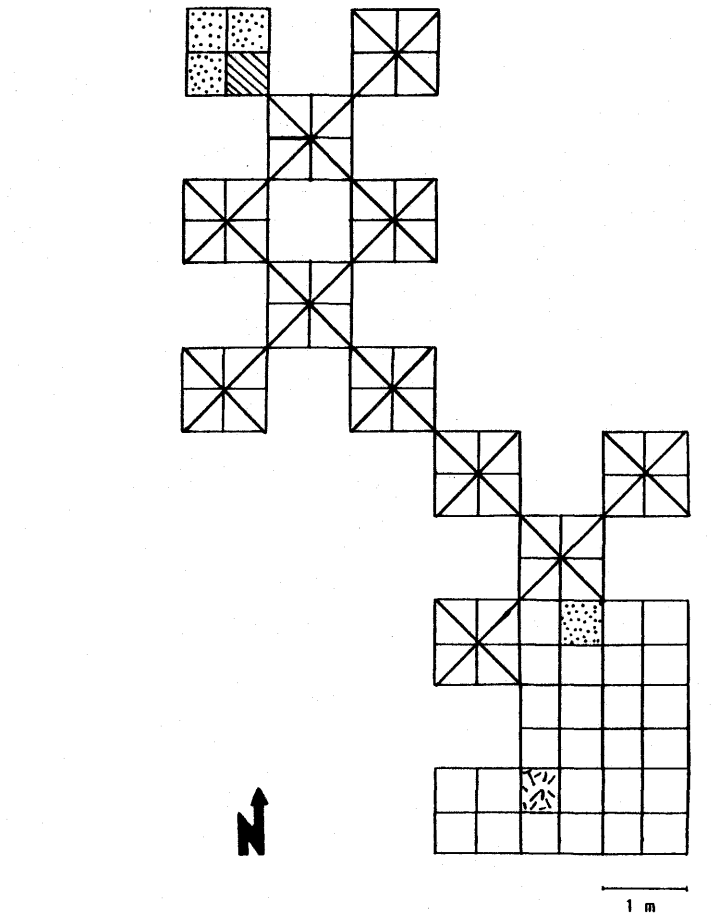


Figure 35: Distribution Density by Number of Unburned and Burned Freshwater Clam Shell Level 2A, Prairie Side-Notched, Area B, EeMw-26.

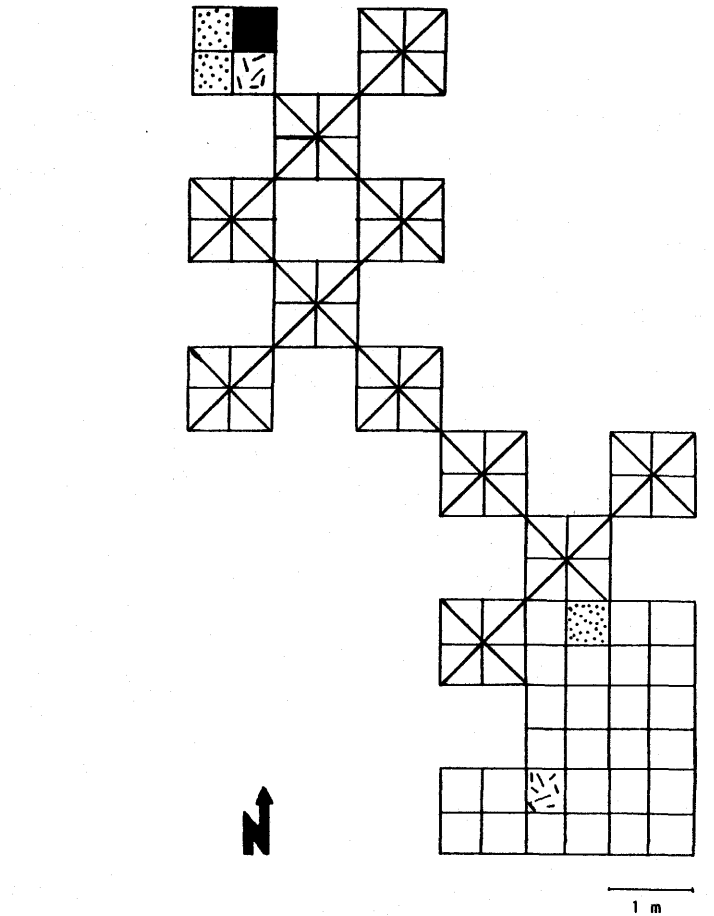


Figure 36: Distribution Density by Weight of Unburned and Burned Freshwater Clam Shell Level 2A, Prairie Side-Notched, Area B, EeMw-26.

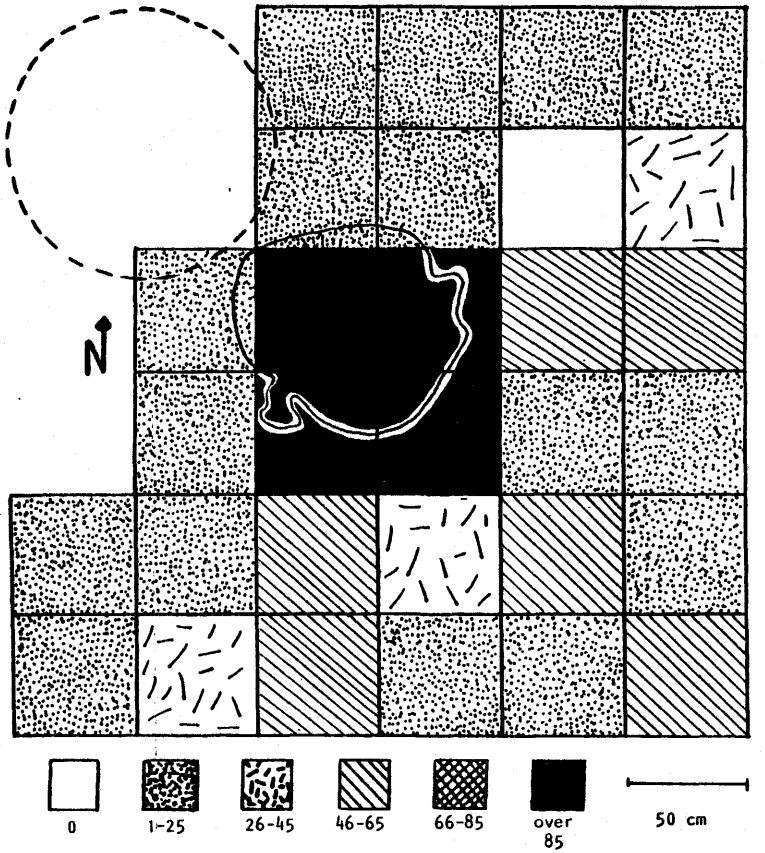


Figure 37: Distribution Density by Number of Burned Mammal Level 3, Avonlea, Area A, EeMw-26.

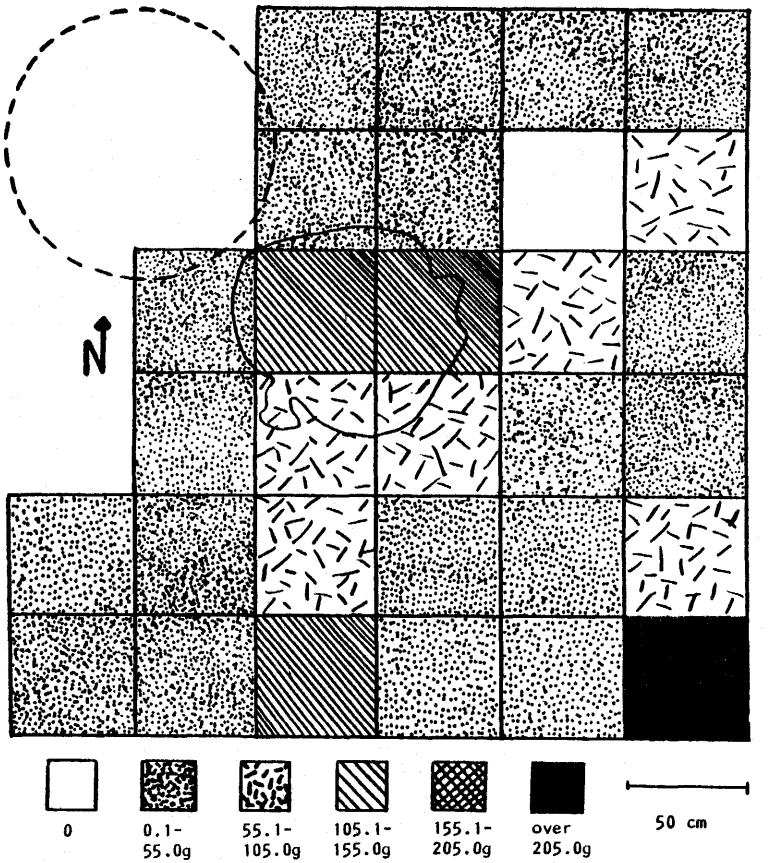


Figure 38: Distribution Density by Weight of Burned Mammal Level 3, Avonlea, Area A, EeMw-26.

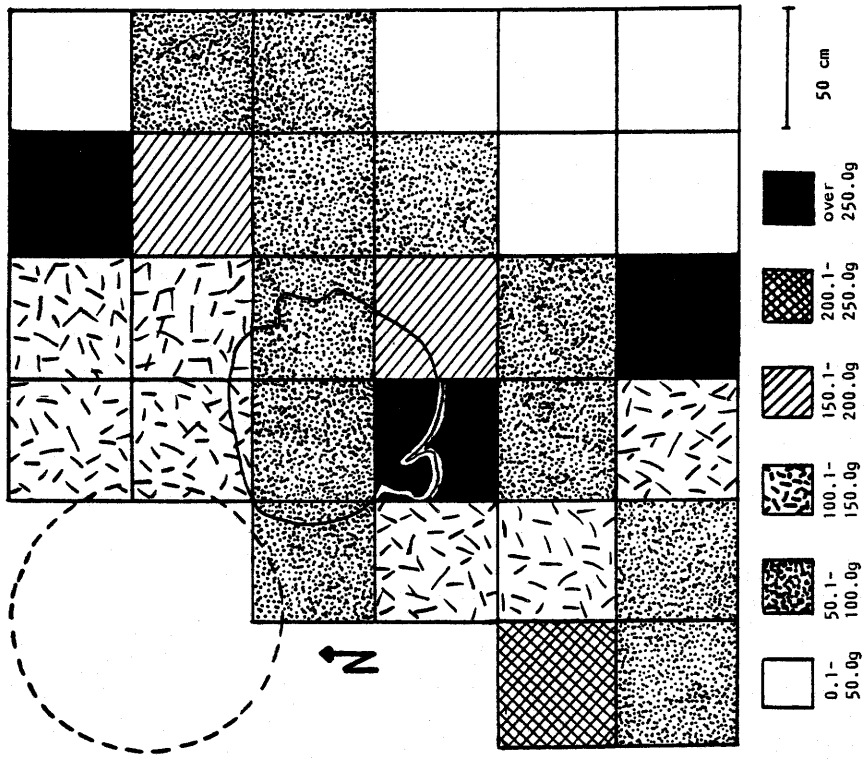


Figure 40: Distribution Density by Weight of Unburned Mammal Level 3, Avonlea, Area A, EeMw-26.

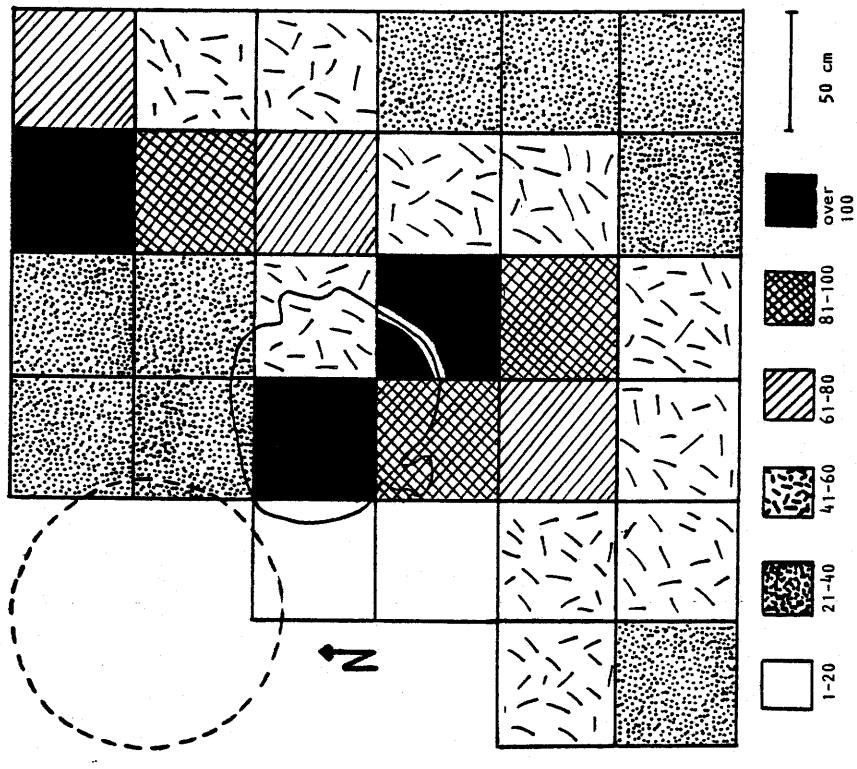


Figure 39: Distribution Density by Number of Unburned Mammal Level 3, Avonlea, Area A, EeMw-26.

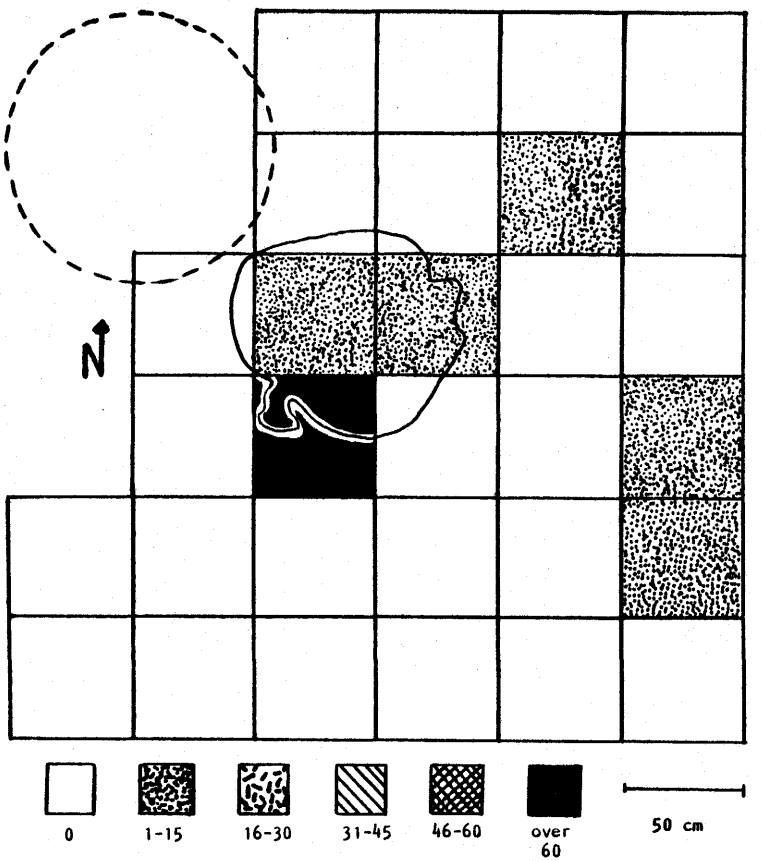


Figure 41: Distribution Density by Number of Burned Fish Level 3, Avonlea, Area A, EeMw-26.

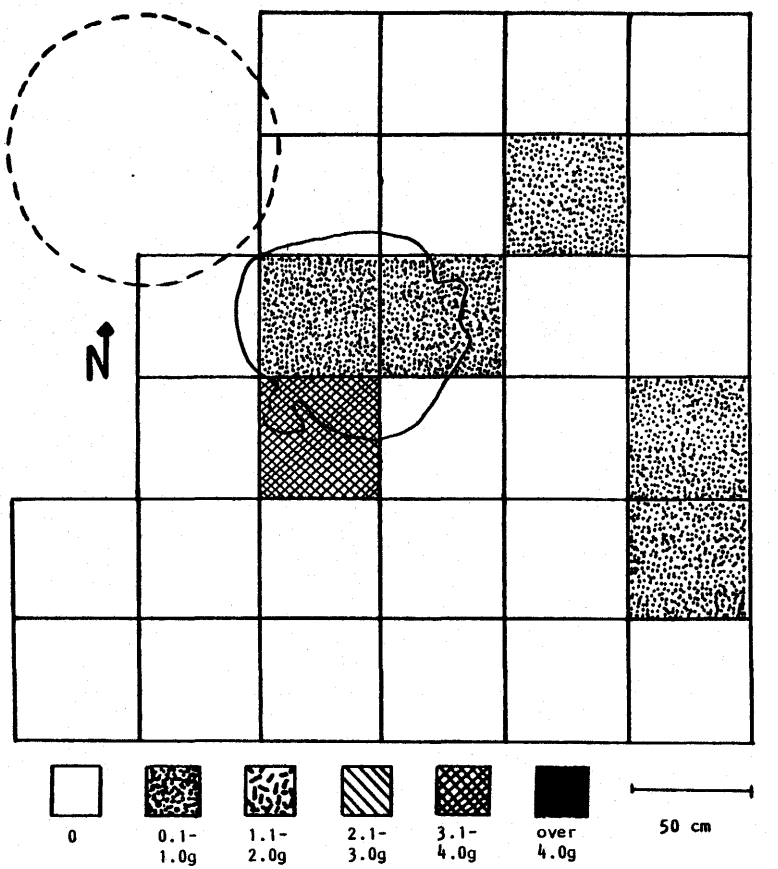


Figure 42: Distribution Density by Weight of Burned Fish Level 3, Avonlea, Area A, EeMw-26.

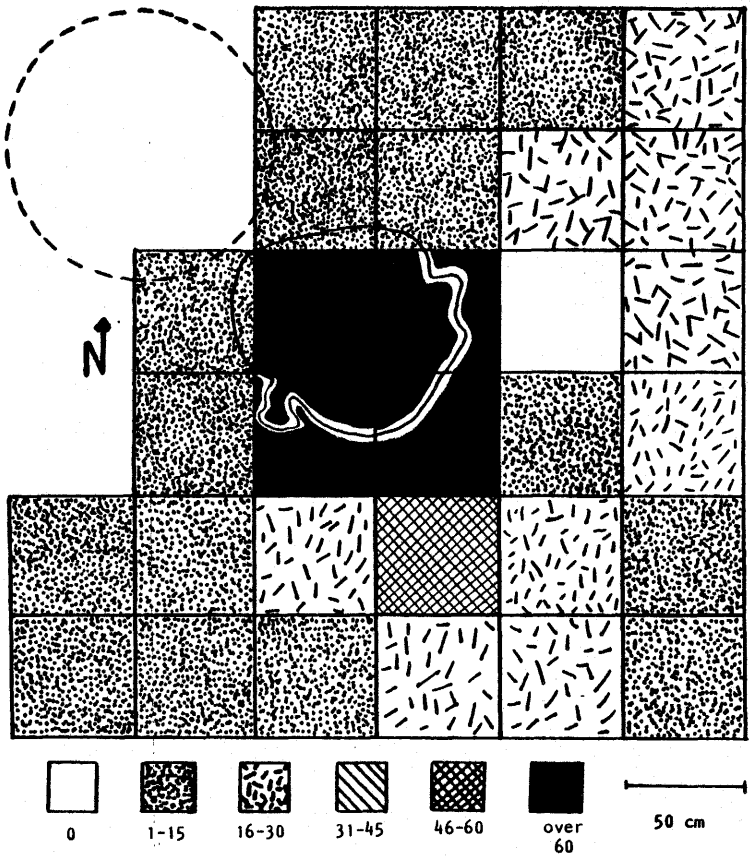


Figure 43: Distribution Density by Number of Unburned Fish Level 3, Avonlea, Area A, EeMw-26.

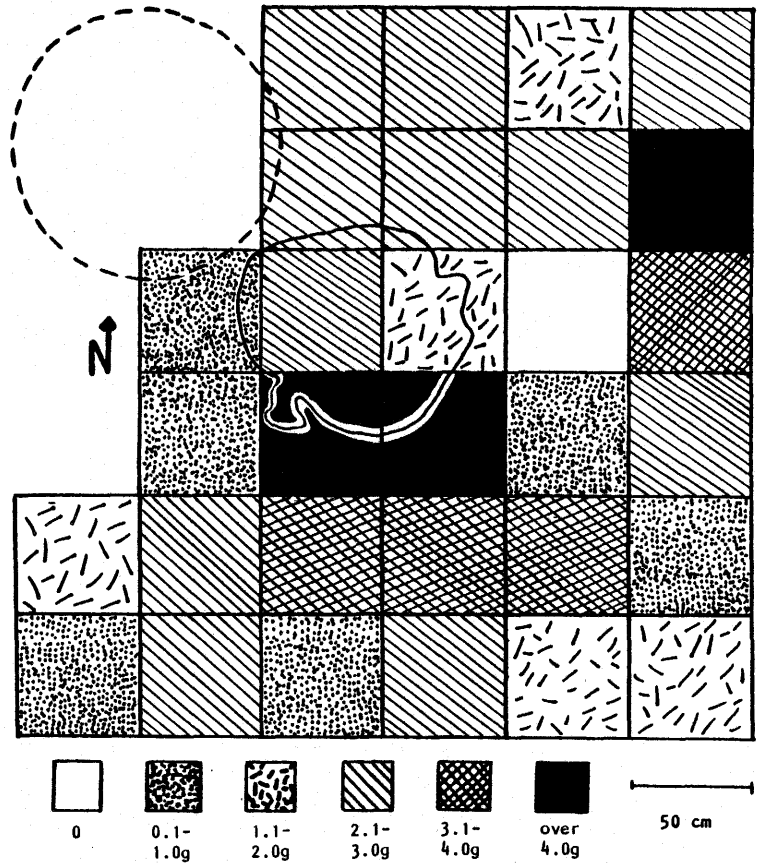


Figure 44: Distribution Density by Weight of Unburned Fish Level 3, Avonlea, Area A, EeMw-26.

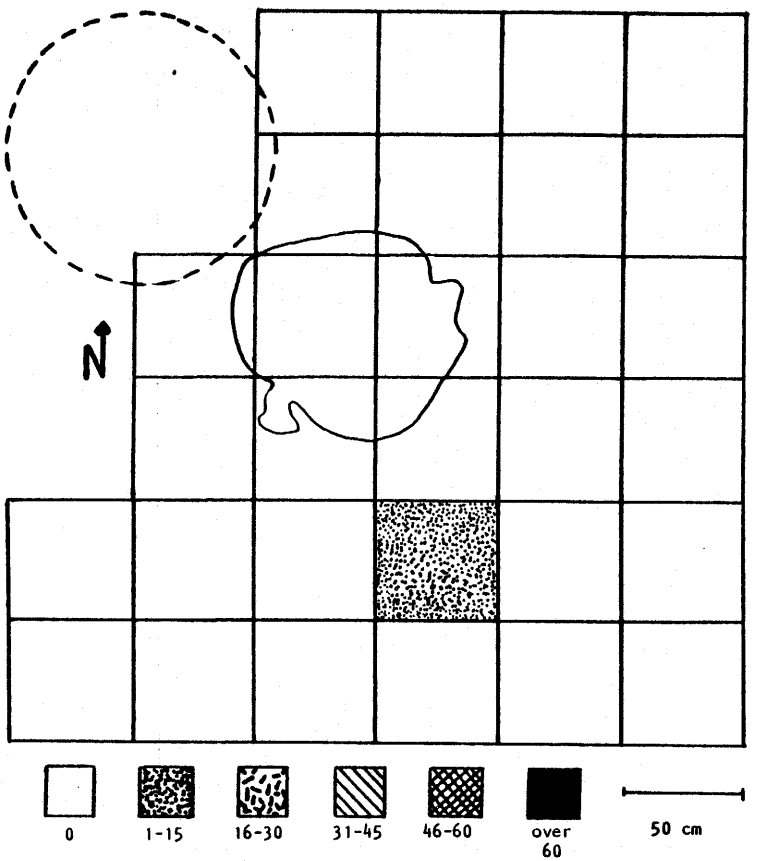


Figure 45: Distribution Density by Number of Burned Bird Level 3, Avonlea, Area A, EeMw-26.

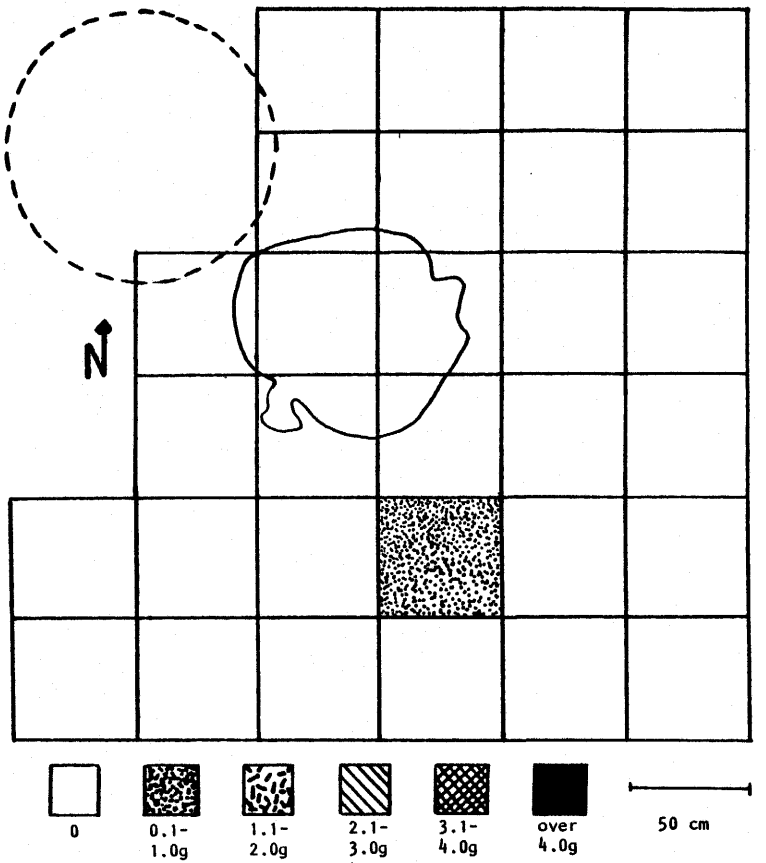


Figure 46: Distribution Density by Weight of Burned Bird Level 3, Avonlea, Area A, EeMw-26.

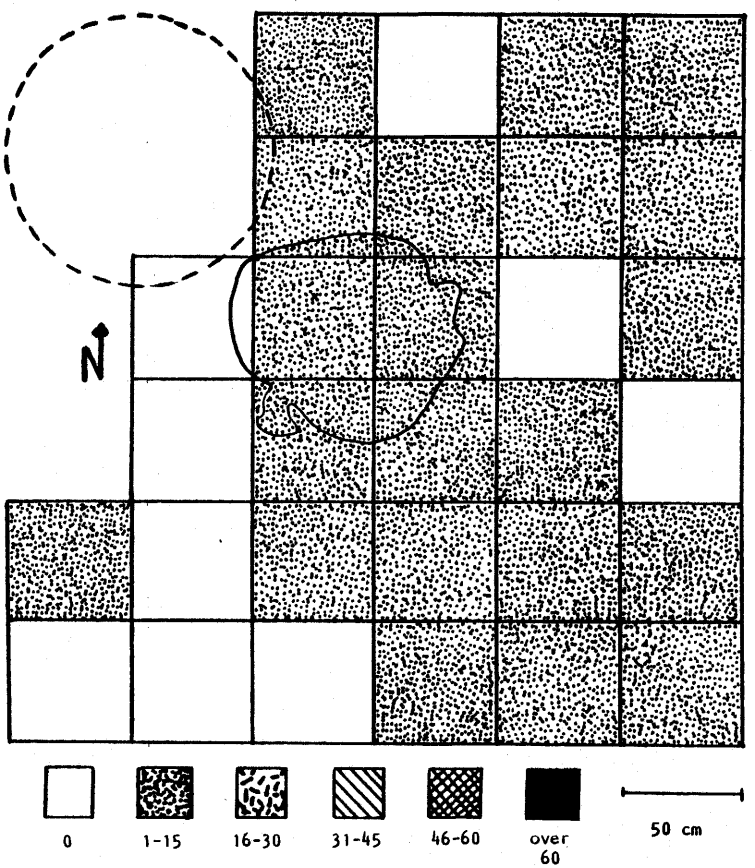


Figure 47: Distribution Density by Number of Unburned Bird Level 3, Avonlea, Area A, EeMw-26.

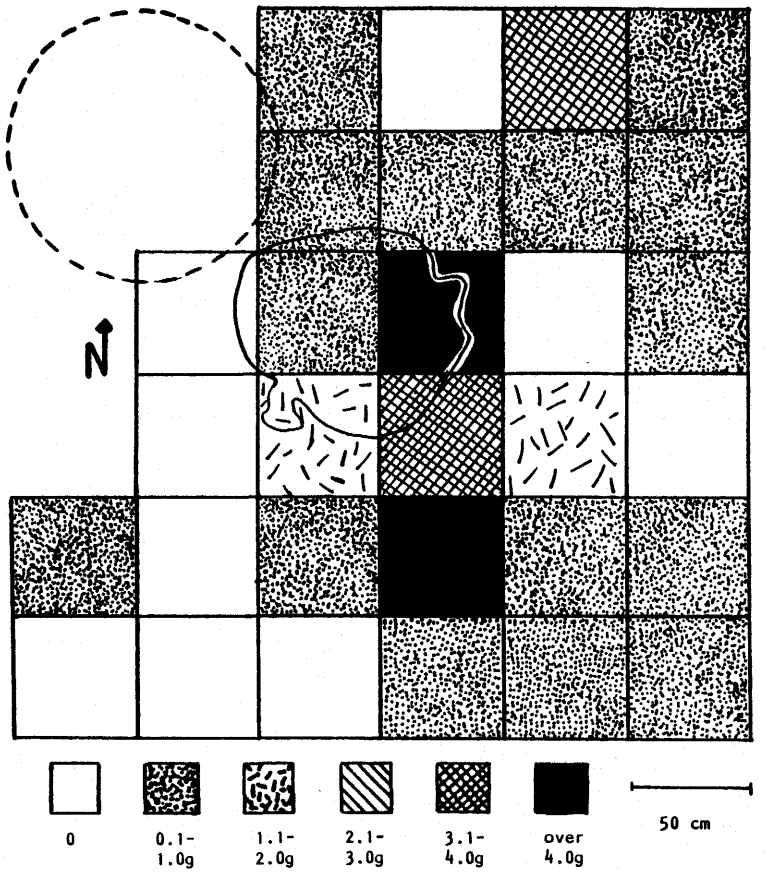


Figure 48: Distribution Bensity by Weight of Unburned Bird Level 3, Avonlea, Area A, EeMw-26.

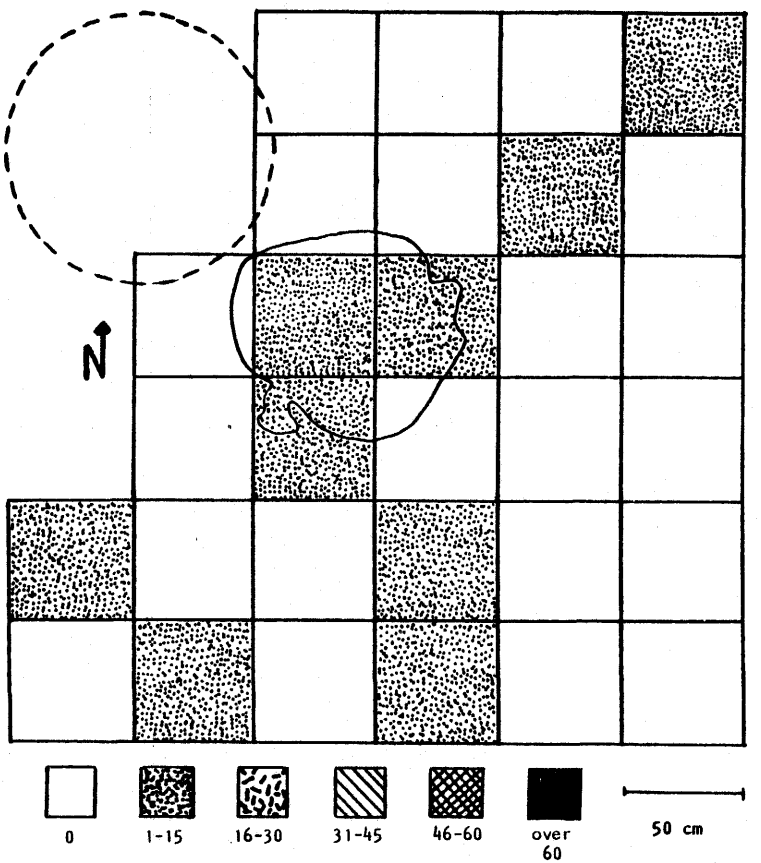


Figure 49: Distribution Density by Number of Unburned and Burned Freshwater Clam Shell Level 3, Avonlea, Area A, EeMw-26.

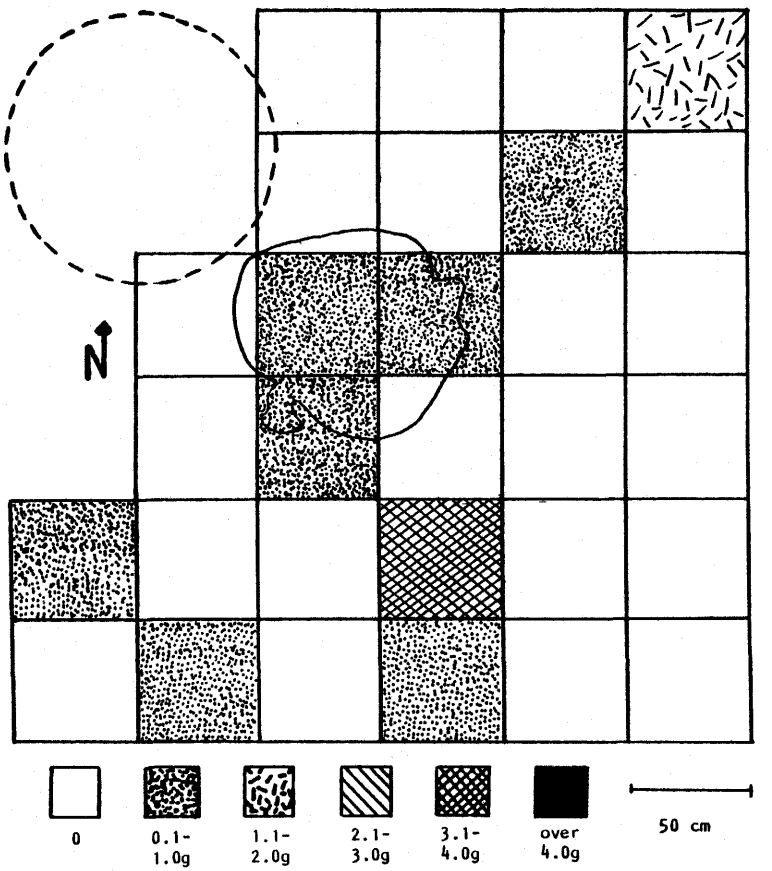


Figure 50: Distribution Density by Weight of Unburned and Burned Freshwater Clam Shell Level 3, Avonlea, Area A, EeMw-26.

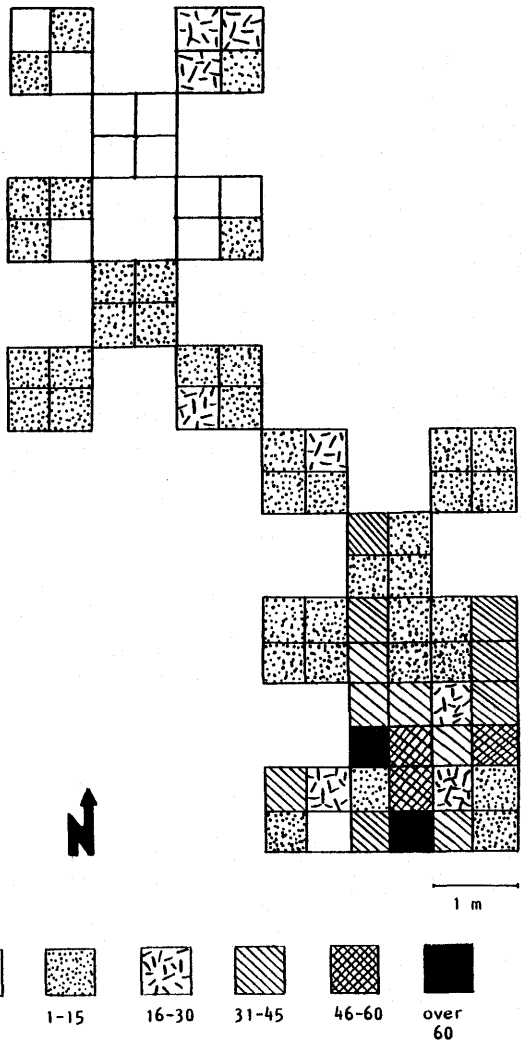


Figure 51: Distribution Density by Number of Burned Mammal Level 3, Avonlea, Area B, EeMw-26.

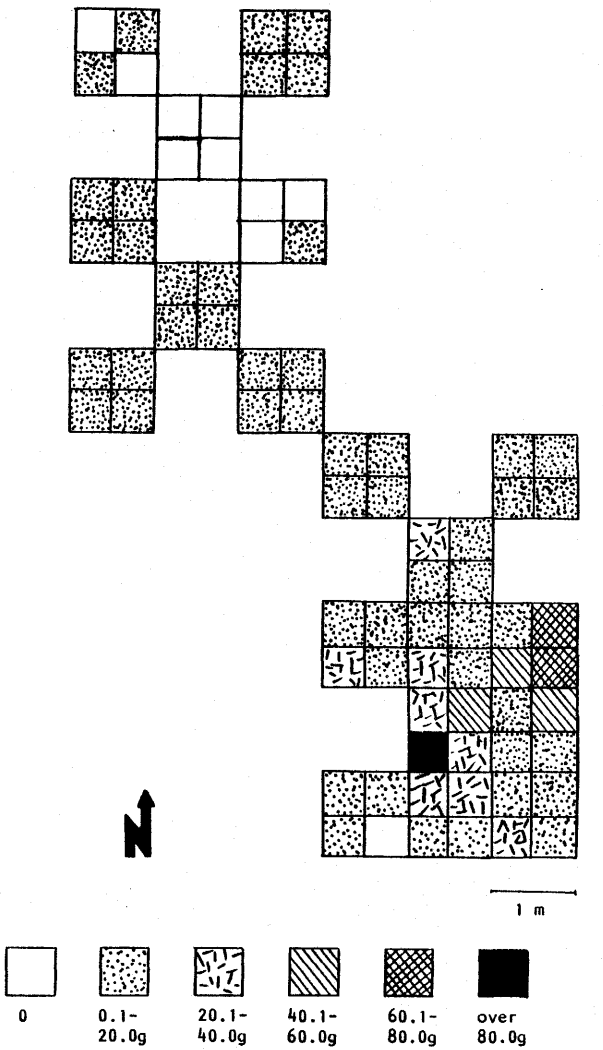


Figure 52: Distribution Density by Weight of Burned Mammal Level 3, Avonlea, Area B, EeMw-26.

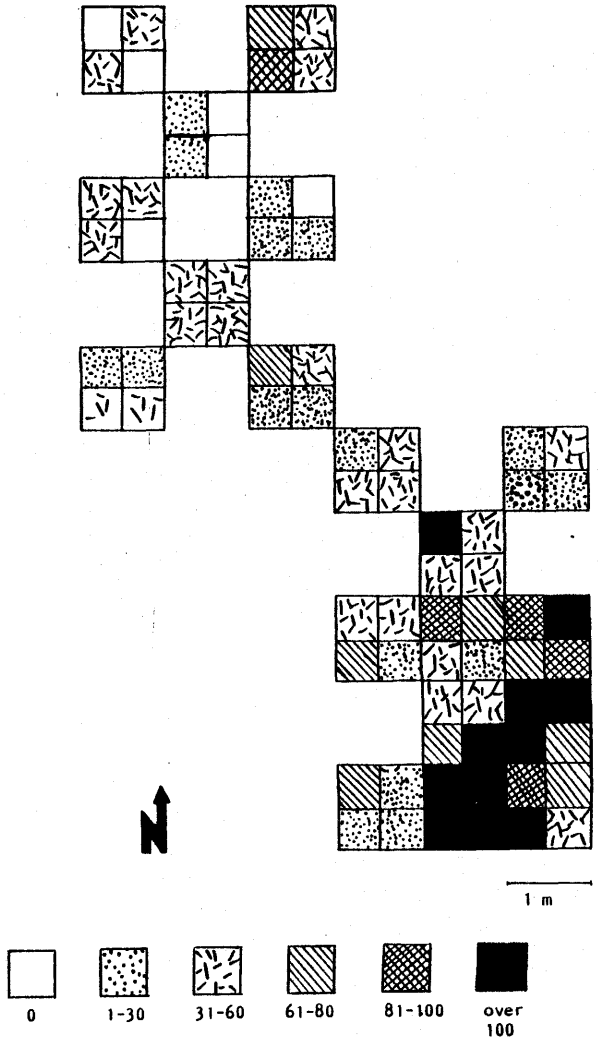


Figure 53: Distribution Density by Number of Unburned Mammal Level 3, Avonlea, Area B, EeMw-26.

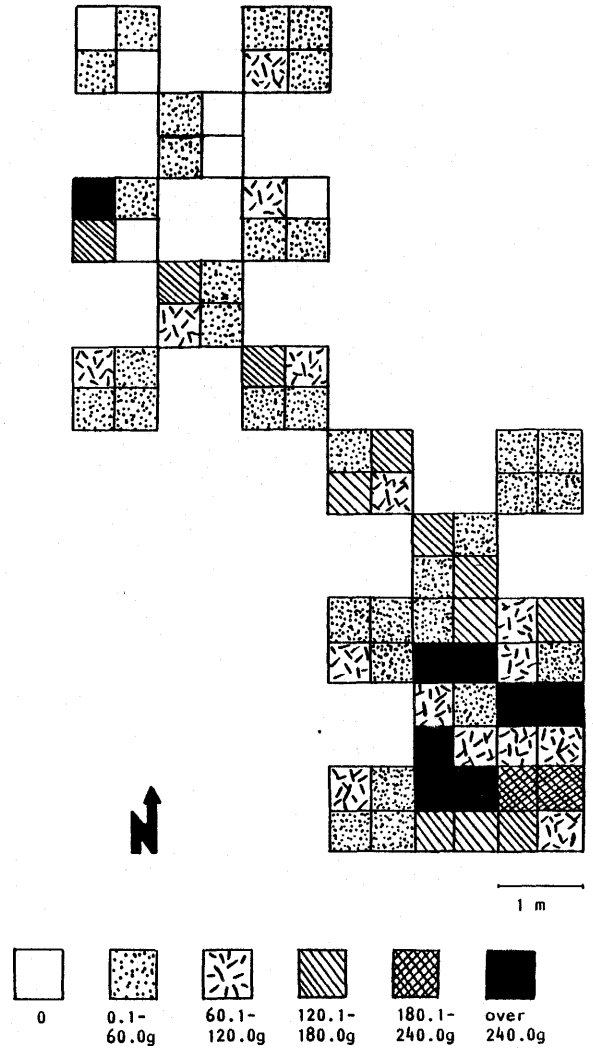


Figure 54: Distribution Density by Weight of Unburned Mammal Level 3, Avonlea, Area B, EeMw-26.

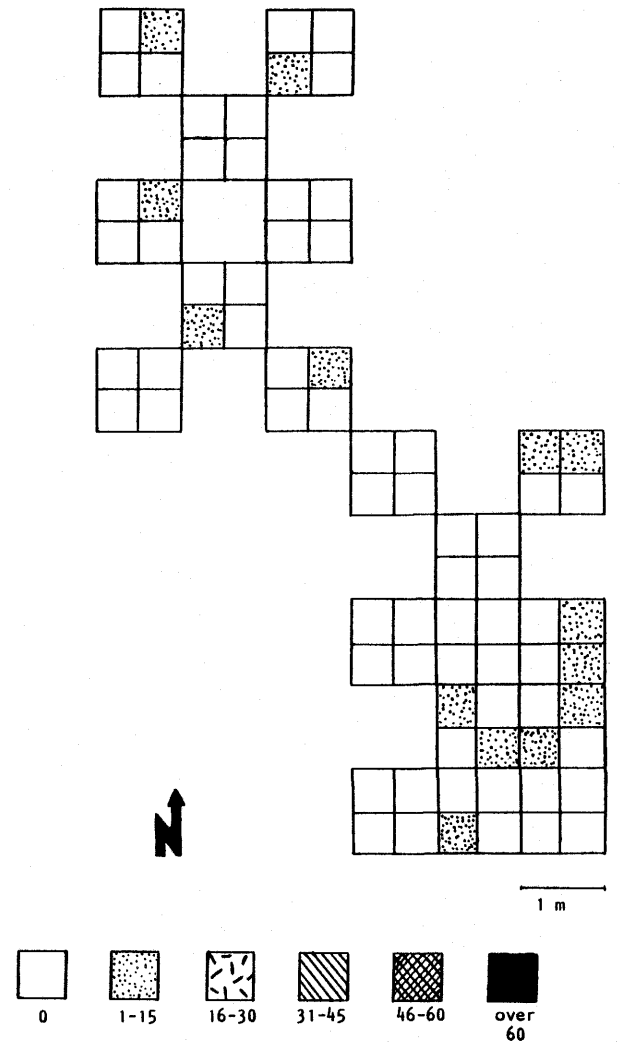


Figure 55: Distribution Density by Number of Burned Fish Level 3, Avonlea, Area B, EeMw-26.

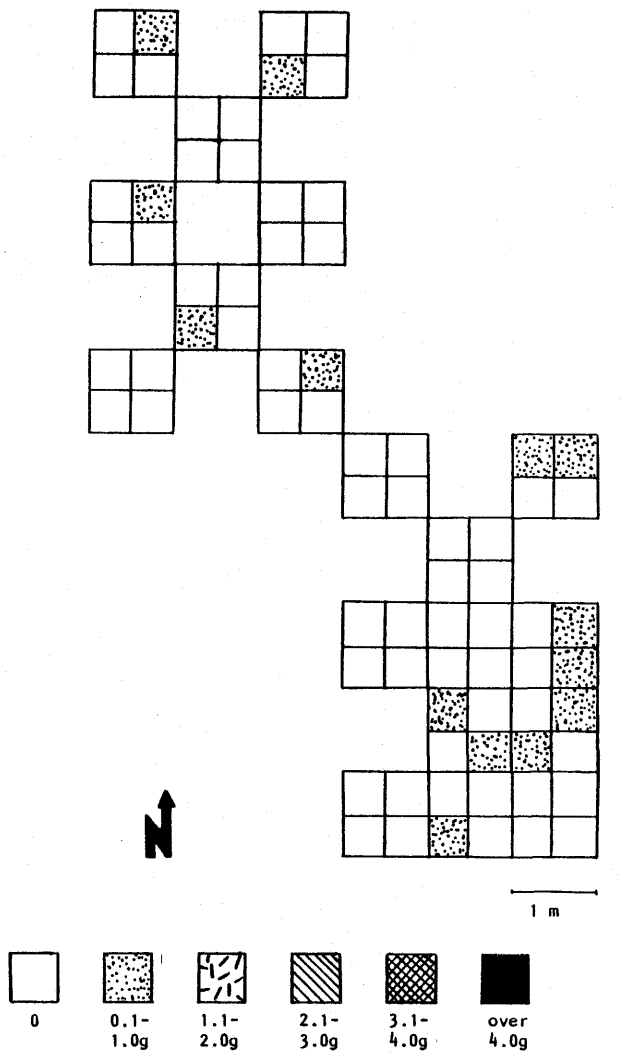


Figure 56: Distribution Density by Weight of Burned Fish Level 3, Avonlea, Area B, EeMw-26.

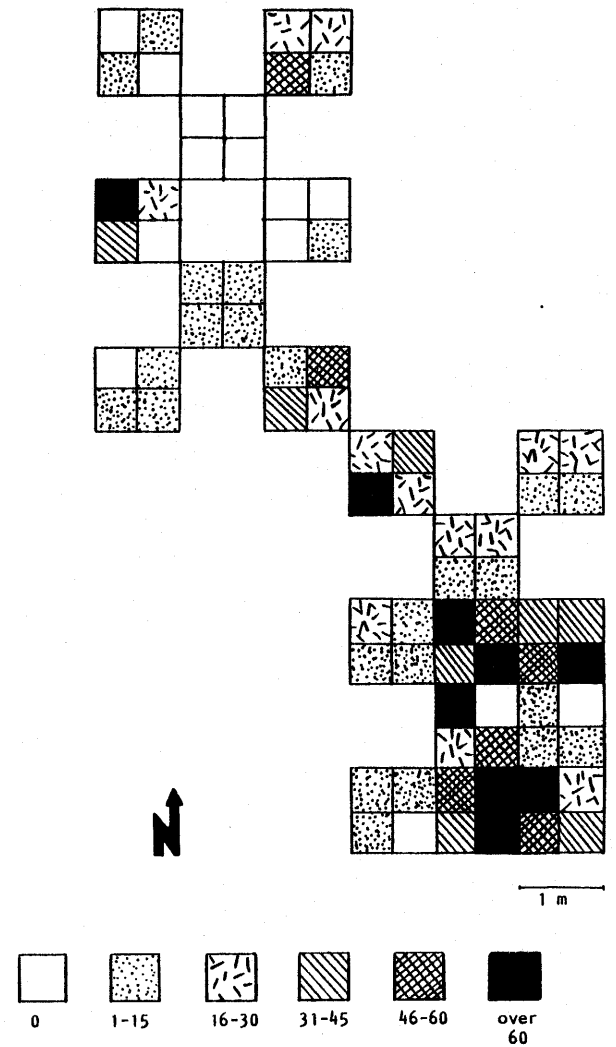


Figure 57 : Distribution Density by Number of Unburned Fish Level 3, Avonlea, Area B, EeMw-26.

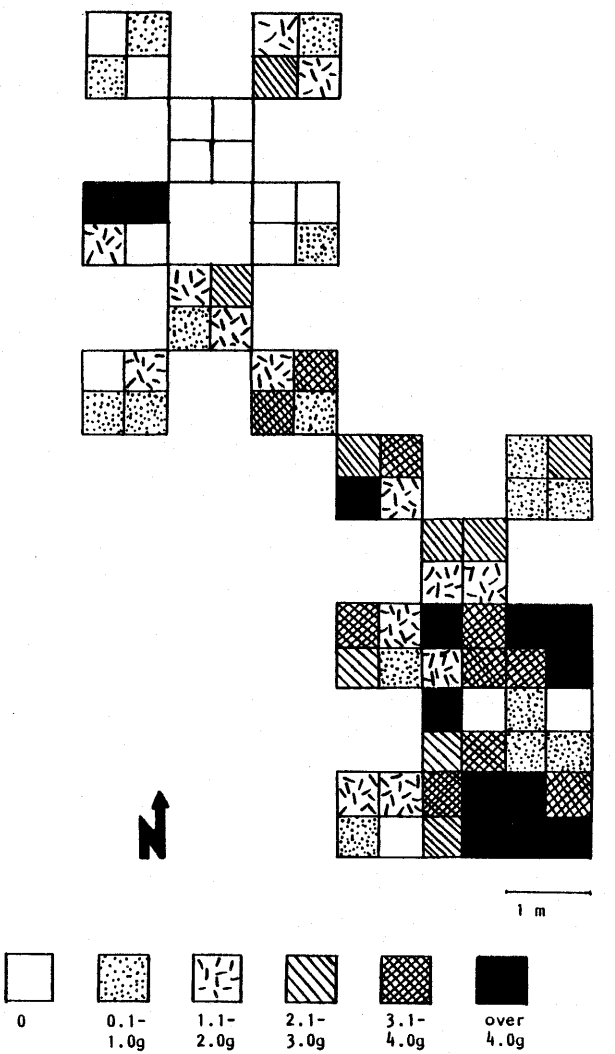


Figure 58 : Distribution Density by Weight of Unburned Fish Level 3, Avonlea, Area B, EeMw-26.

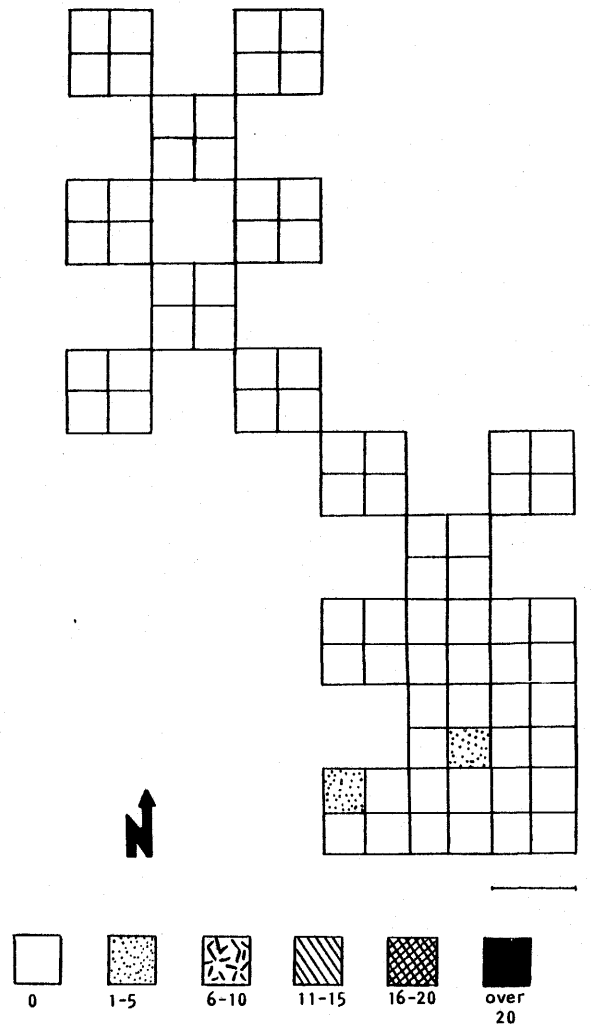


Figure 59: Distribution Density by Number of Burned Bird Level 3, Avonlea, Area B, EeMw-26.

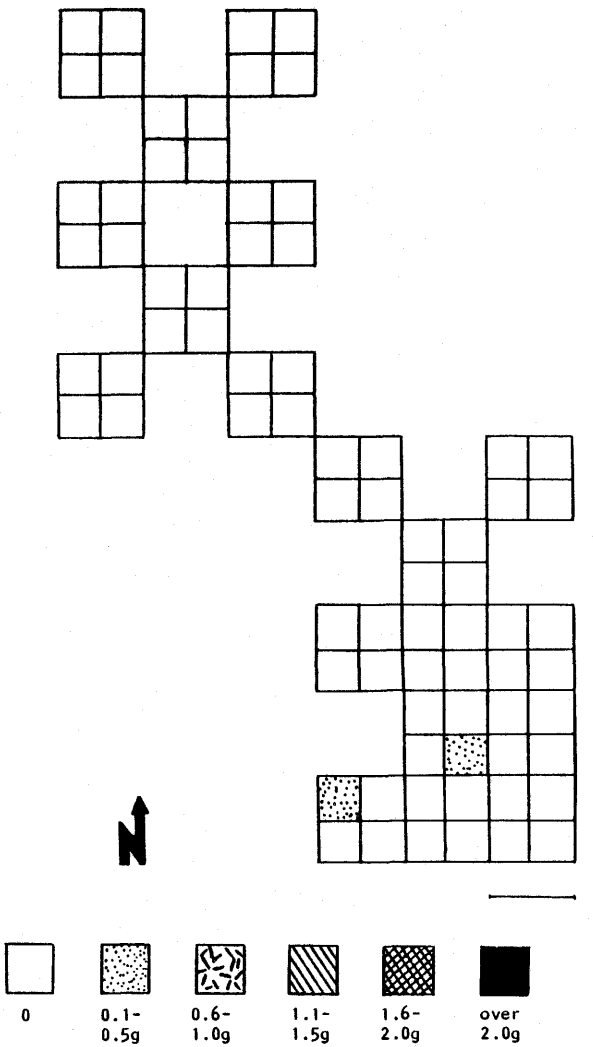


Figure 60: Distribution Density by Weight of Burned Bird Level 3, Avonlea, Area B, EeMw-26.

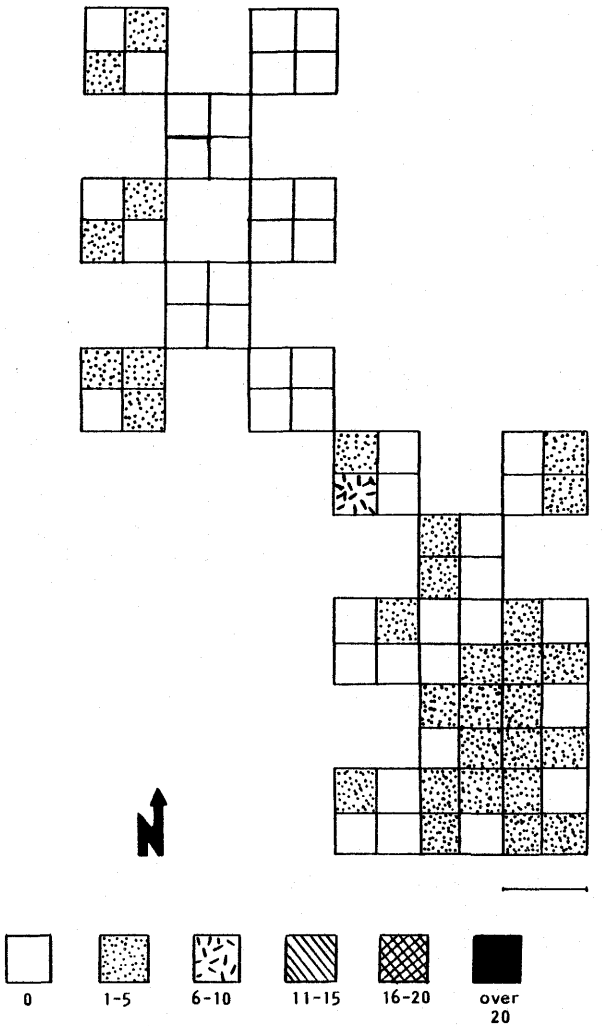


Figure 61: Distribution Density by Number of Unburned Bird Level 3, Avonlea, Area B, EeMw-26.

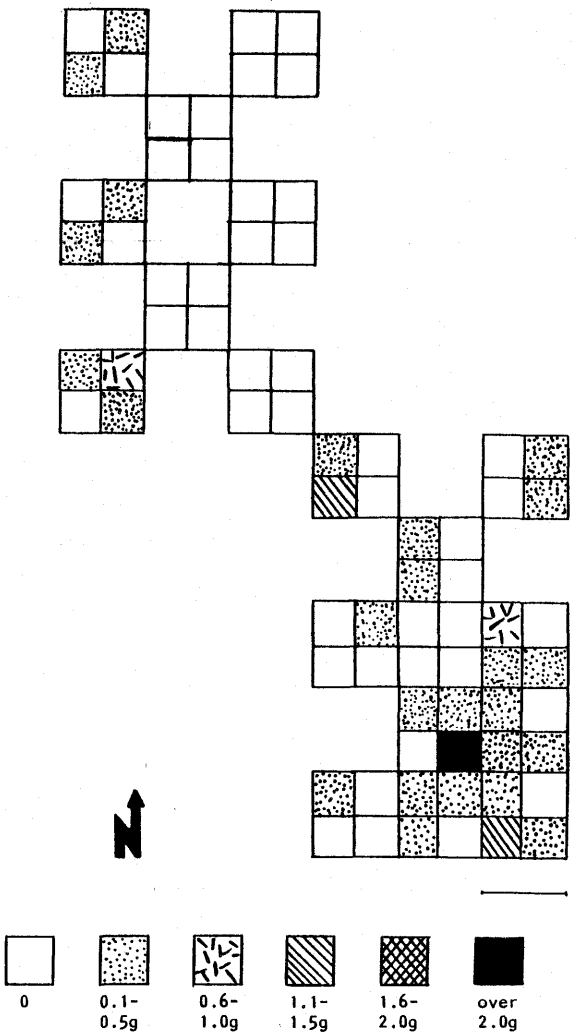


Figure 62: Distribution Density by Weight of Unburned Bird Level 3, Avonlea, Area B, EeMw-26.

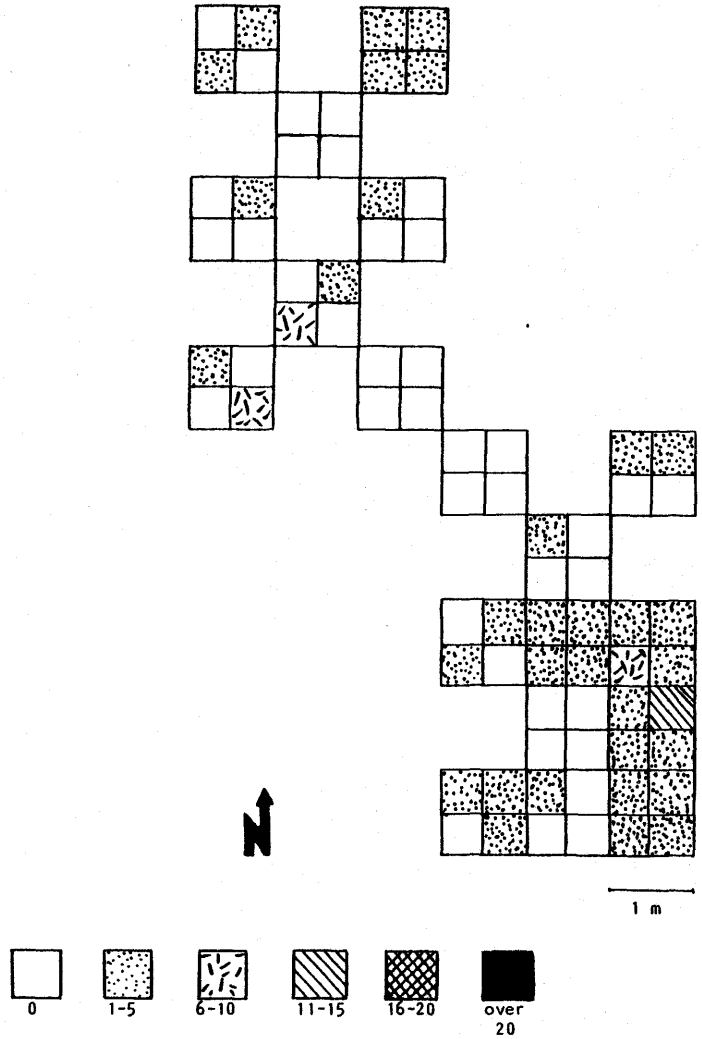


Figure 63: Distribution Density by Number of Unburned and Burned Freshwater Clam Shell Level 3, Avonlea, Area B, EeMw-26.

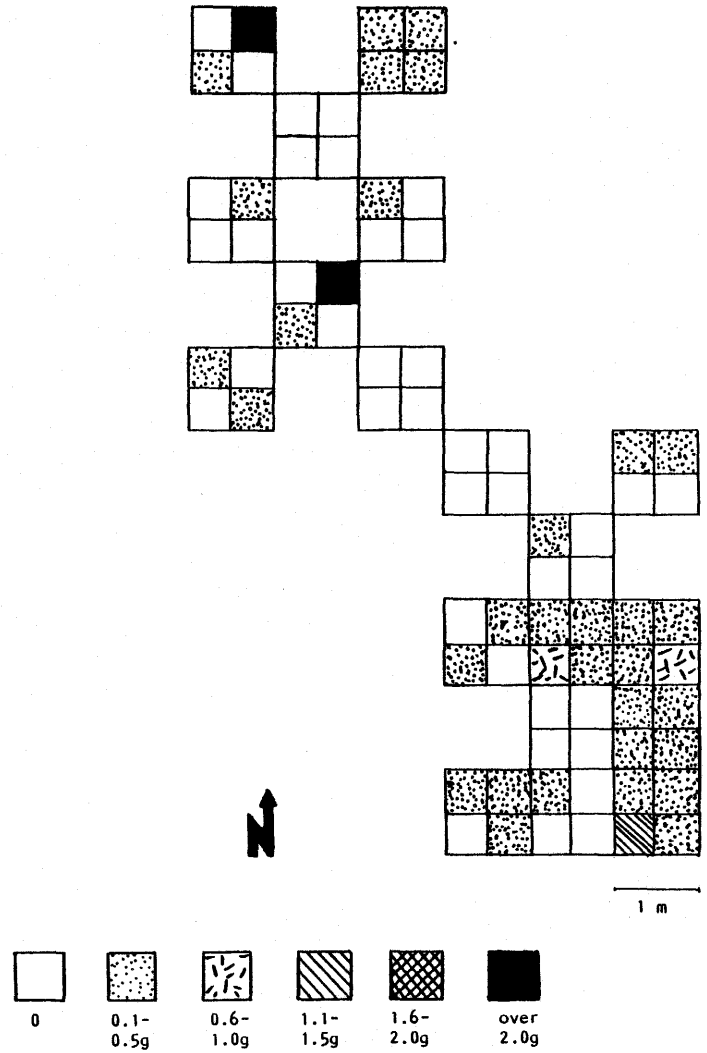


Figure 64: Distribution Density by Weight of Unburned and Burned Freshwater Clam Shell Level 3, Avonlea, Area B, EeMw-26.

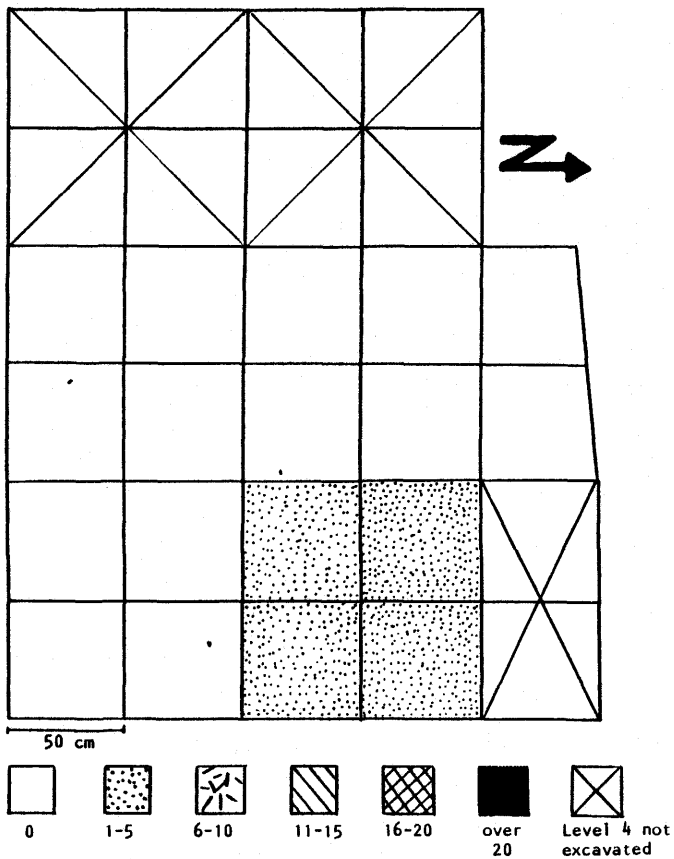


Figure 65: Distribution Density by Number of Burned Mammal Level 4, Avonlea, Area S, EeMw-26.

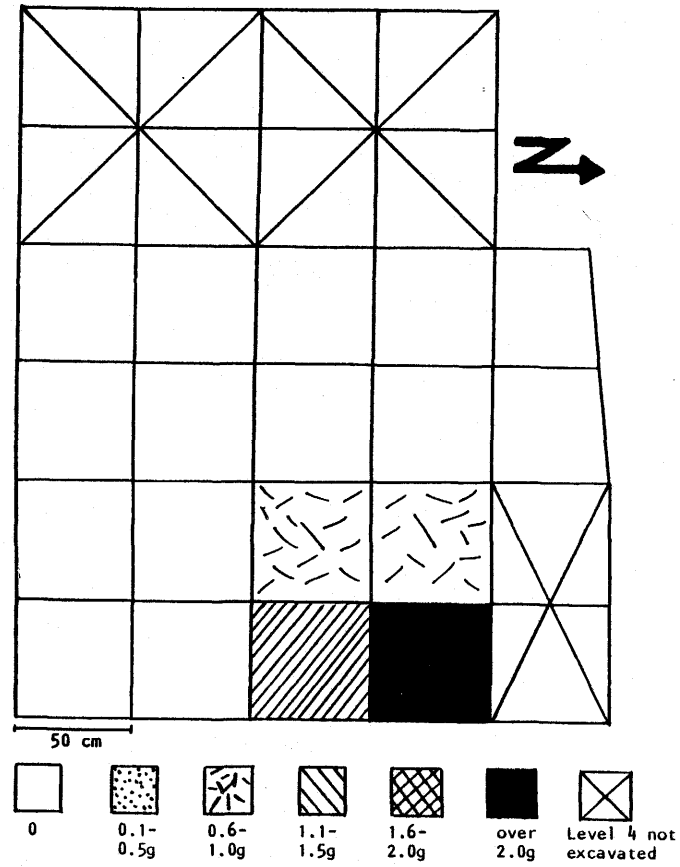


Figure 66: Distribution Density by Weight of Burned Mammal Level 4, Avonlea, Area S, EeMw-26.

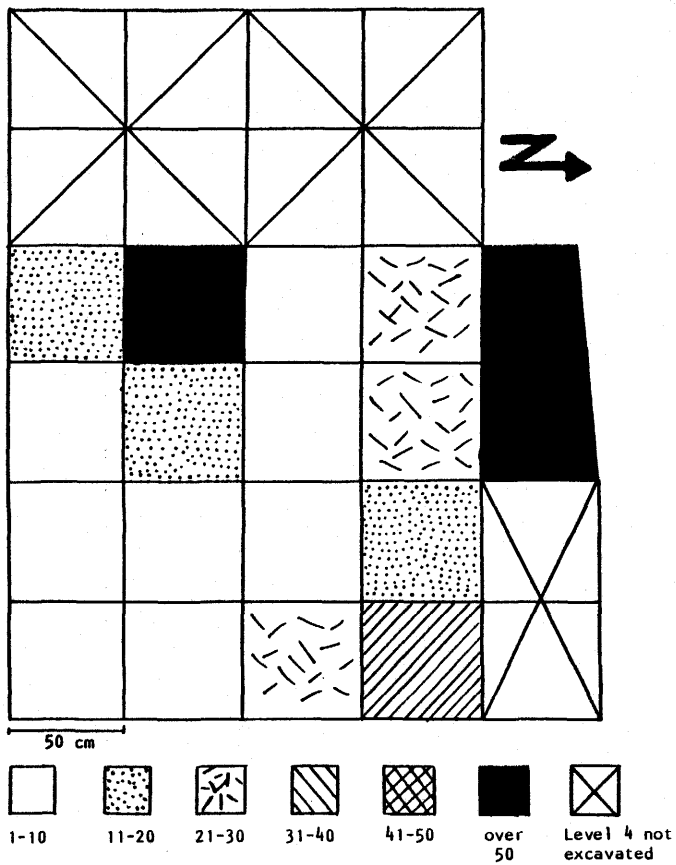


Figure 67: Distribution Density by Number of Unburned Mammal Level 4, Avonlea, Area S, EeMw-26.

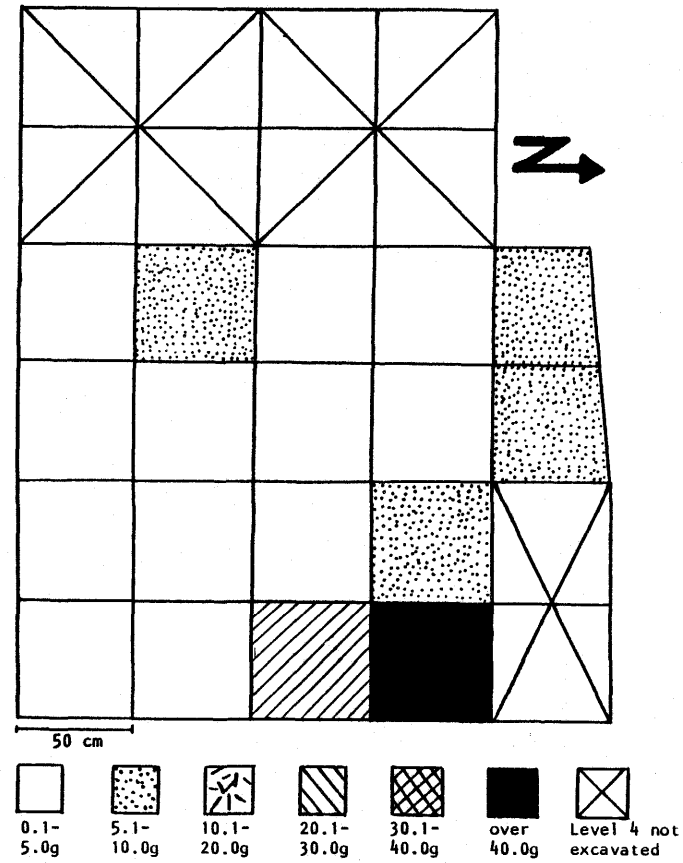


Figure 68: Distribution Density by Weight of Unburned Mammal Level 4, Avonlea, Area S, EeMw-26.

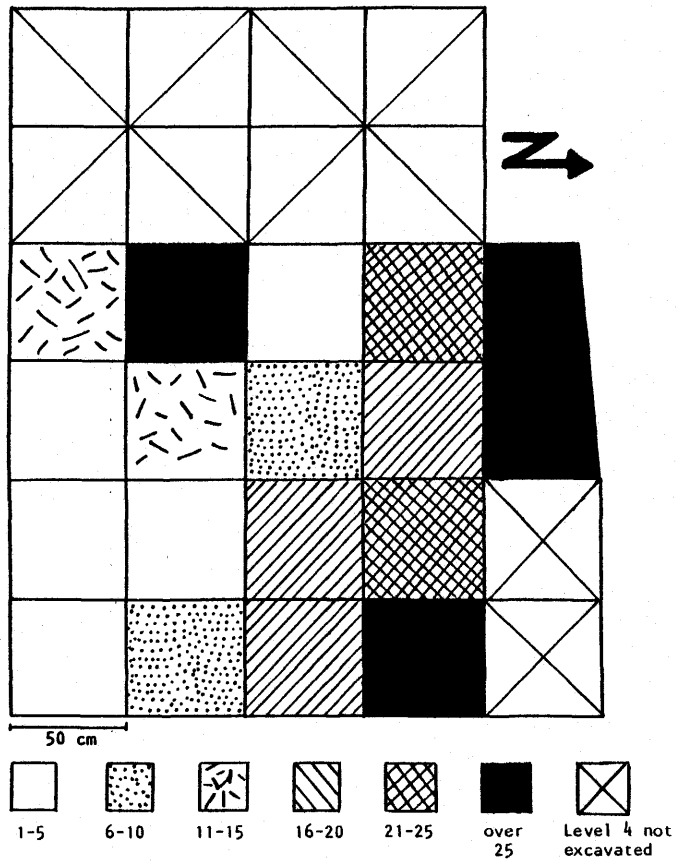


Figure 69: Distribution Density by Number of Unburned Fish Level 4, Avonlea, Area S, EeMw-26.

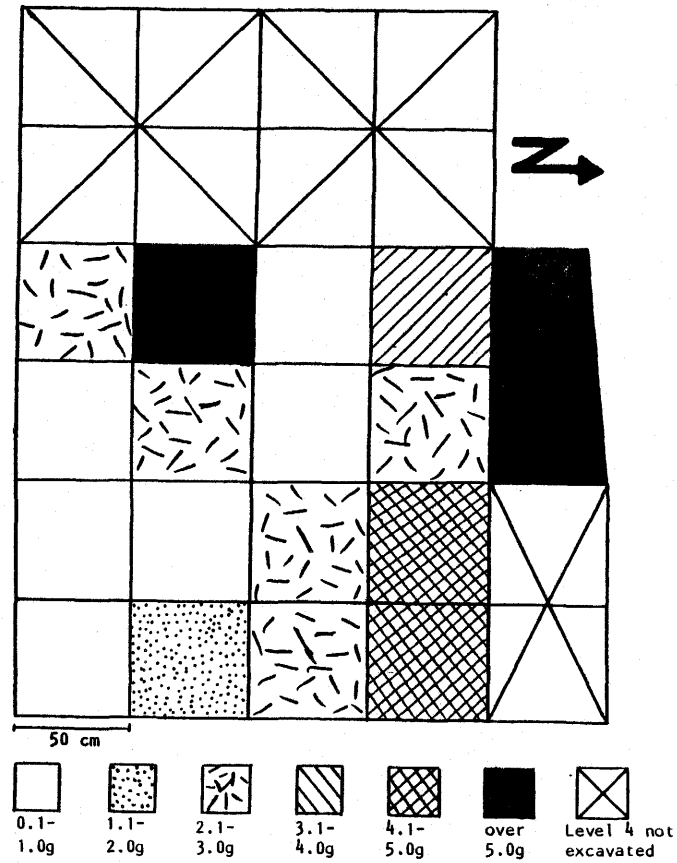


Figure 70: Distribution Density by Weight of Unburned Fish Level 4, Avonlea, Area S, EeMw-26.

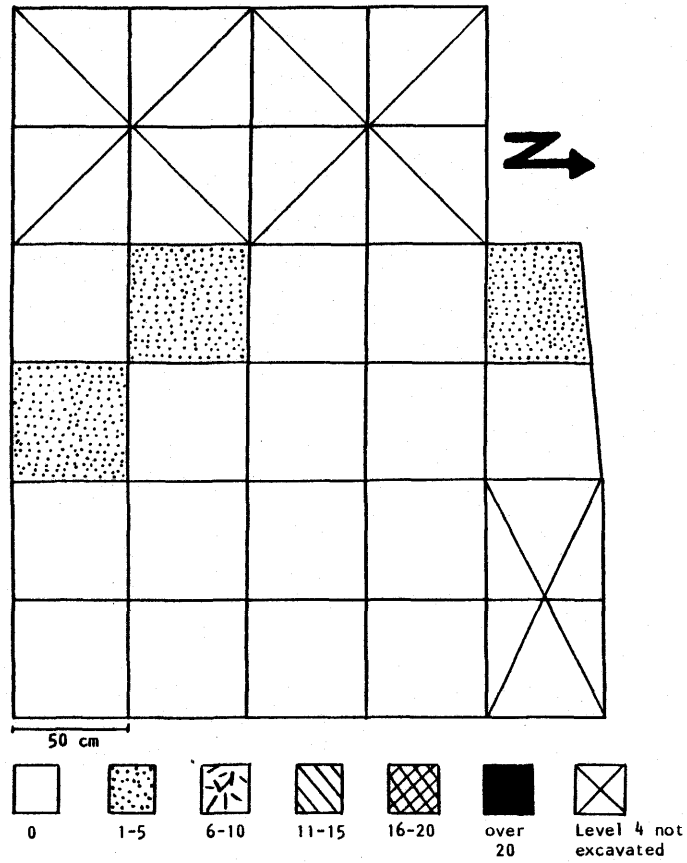


Figure 71: Distribution Density by Number of Unburned Bird Level 4, Avonlea, Area S, EeMw-26.

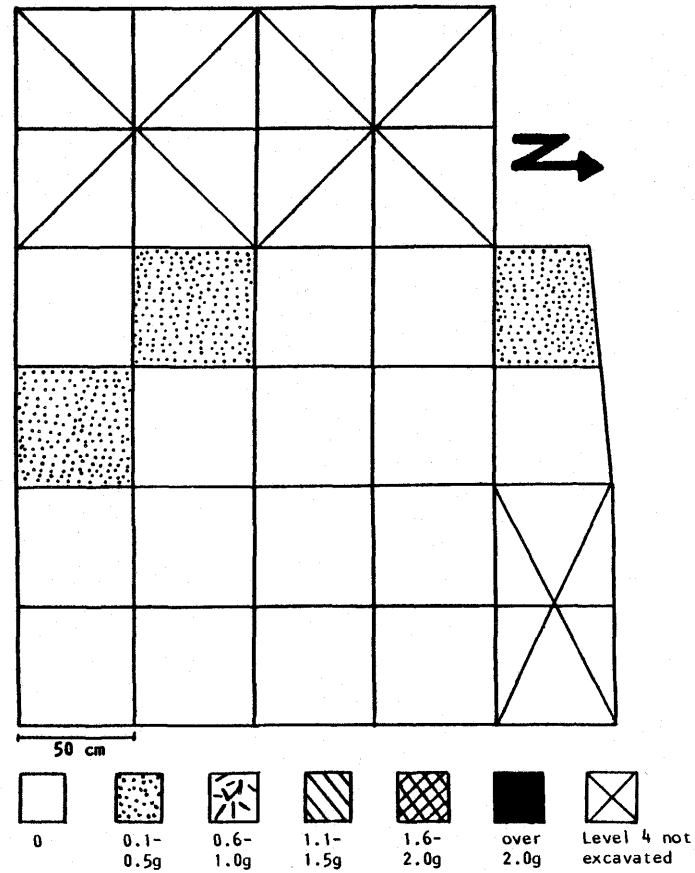


Figure 72: Distribution Density by Weight of Unburned Bird Level 4, Avonlea, Area S, EeMw-26.

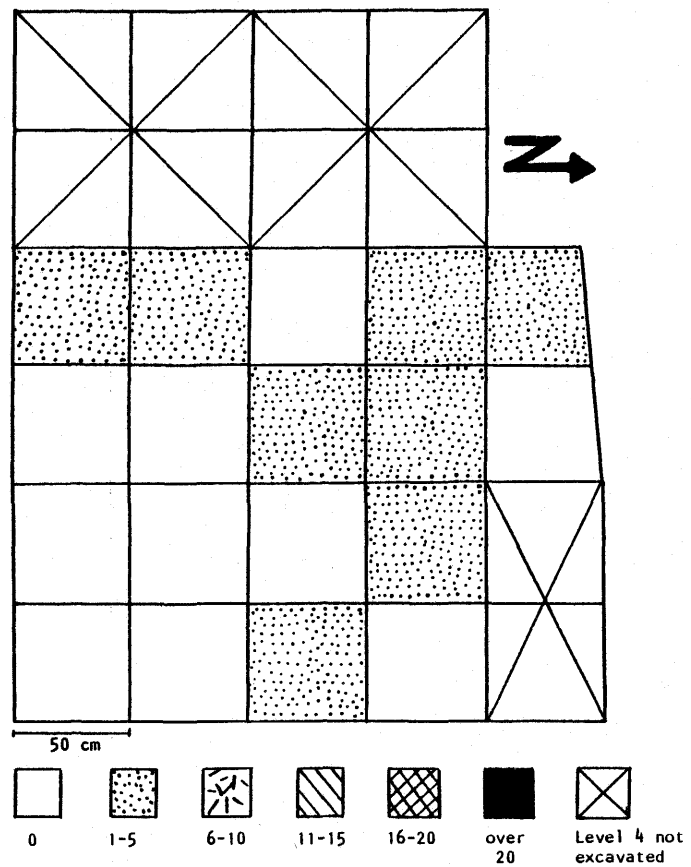


Figure 73: Distribution Density by Number of Unburned and Burned Freshwater Clam Shell Level 4, Avonlea, Area S, EeMw-26.

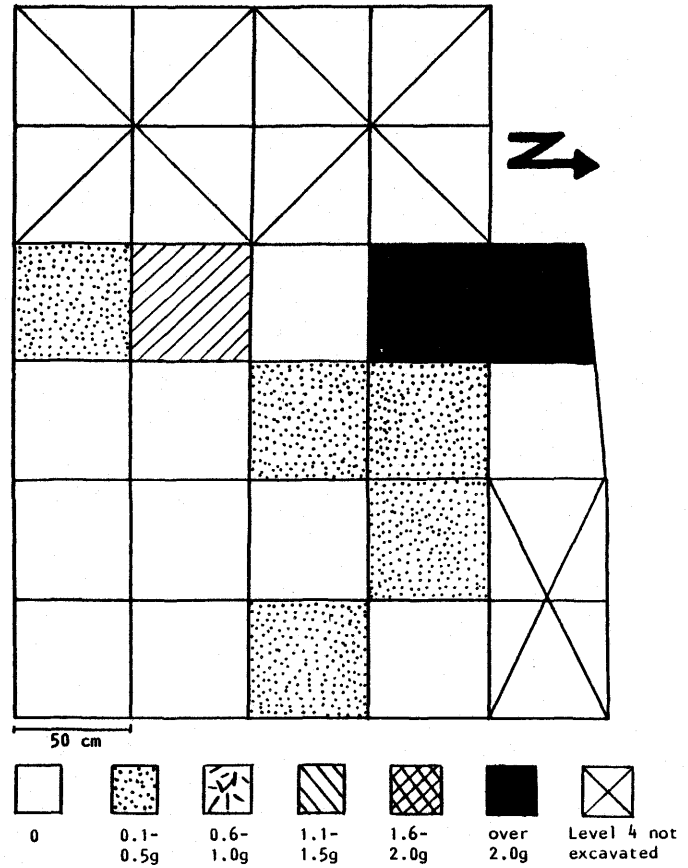


Figure 74: Distribution Density by Weight of Unburned and Burned Freshwater Clam Shell Level 4, Avonlea, Area S, EeMw-26.

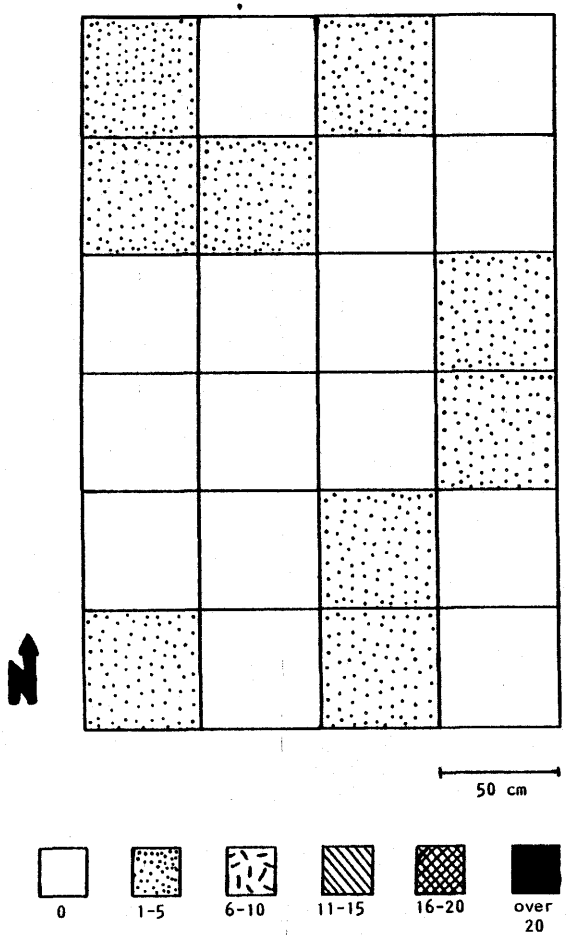


Figure 75: Distribution Density by Number of Burned Mammal Level 5, Area B, EeMw-26.

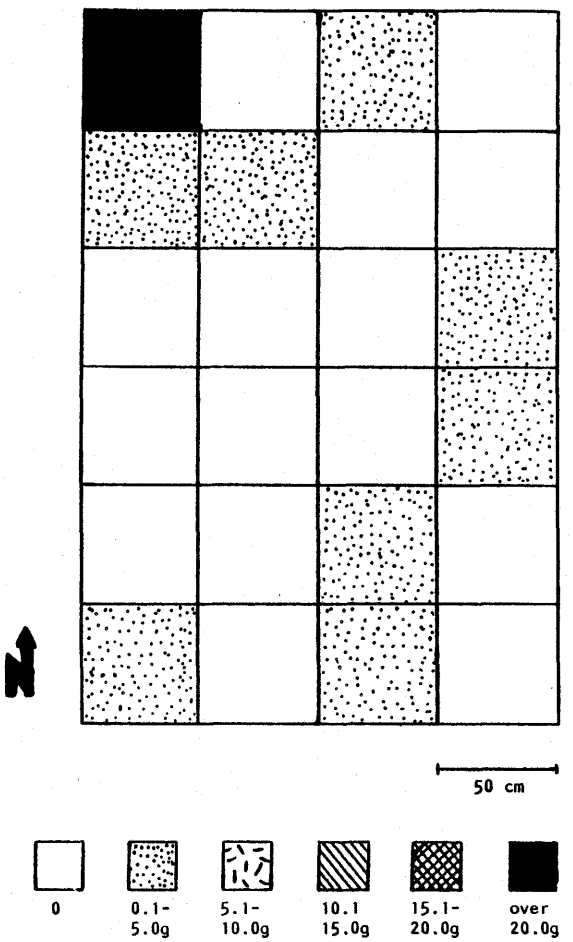


Figure 76: Distribution Density by Weight of Burned Mammal Level 5, Area B, EeMw-26.

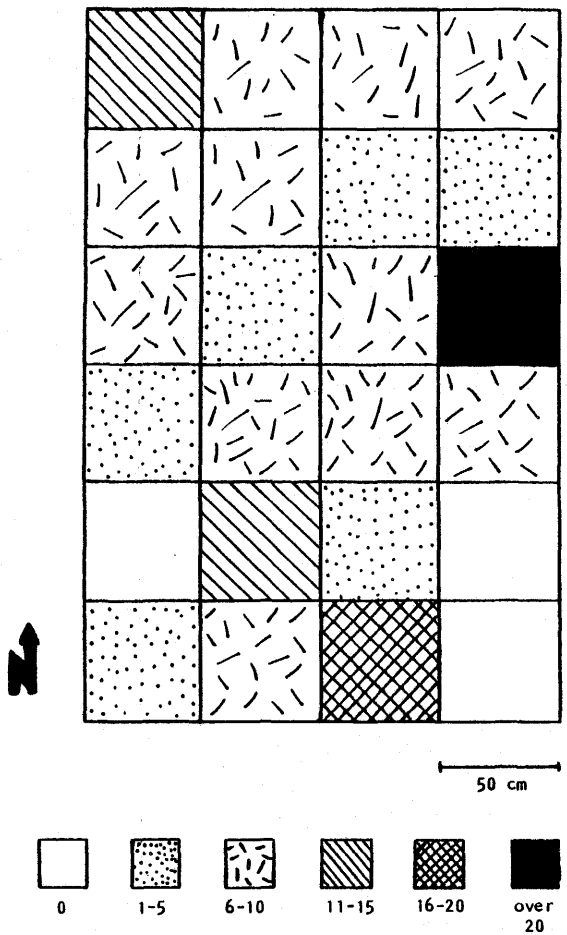


Figure 77: Distribution Density by Number of Unburned Mammal Level 5, Area B, EeMw-26.

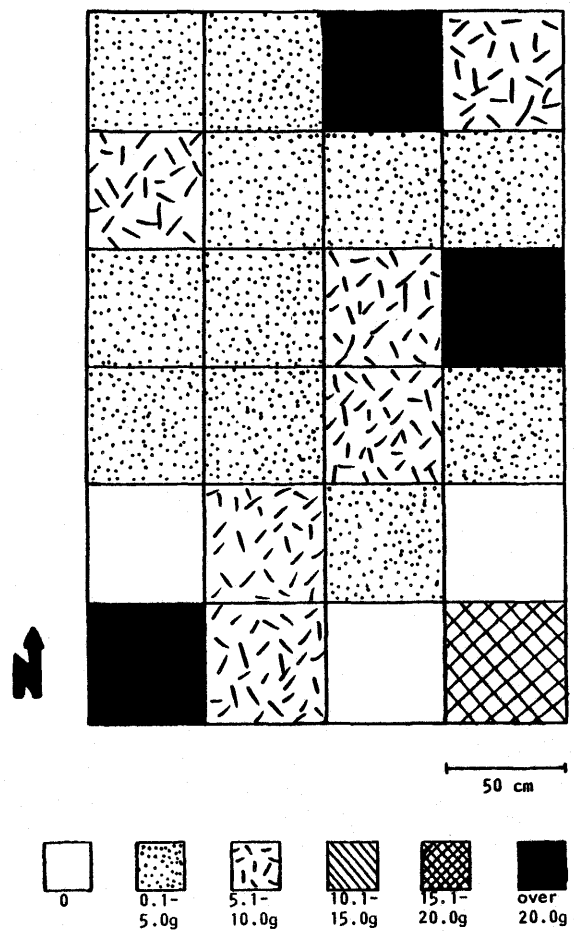


Figure 78: Distribution Density by Weight of Unburned Mammal Level 5, Area B, EeMw-26.

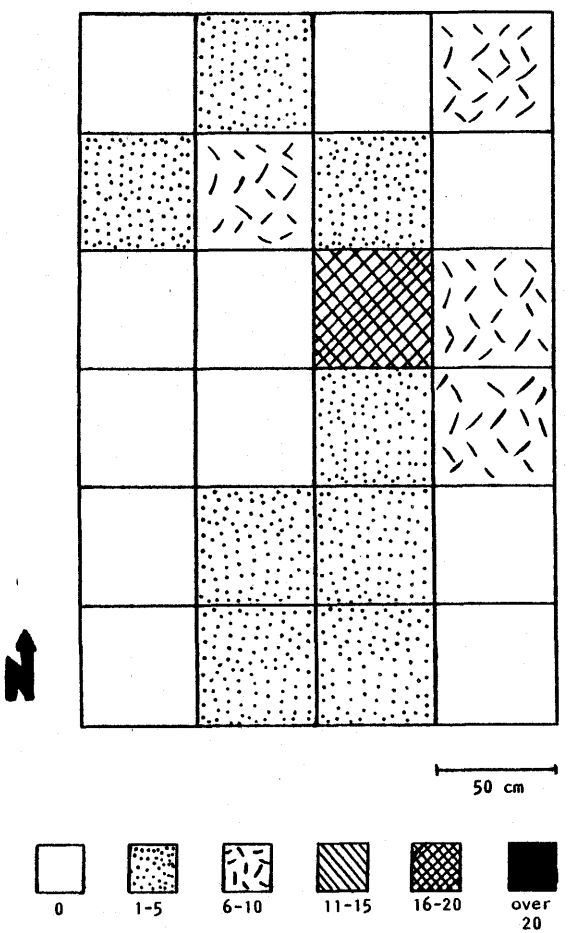


Figure 79: Distribution Density by Number of Unburned Fish Level 5, Area B, EeMw-26.

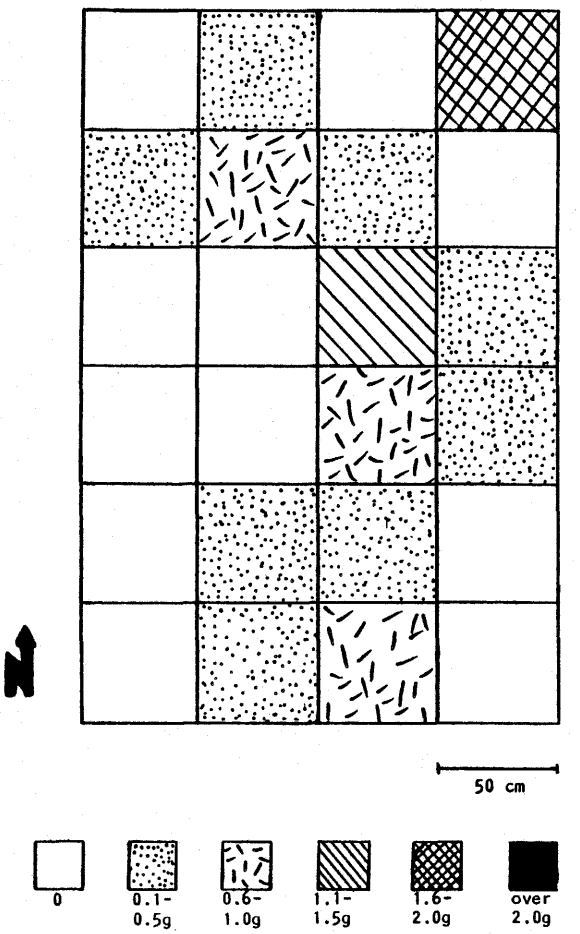


Figure 80: Distribution Density by Weight of Unburned Fish Level 5, Area B, EeMw-26.

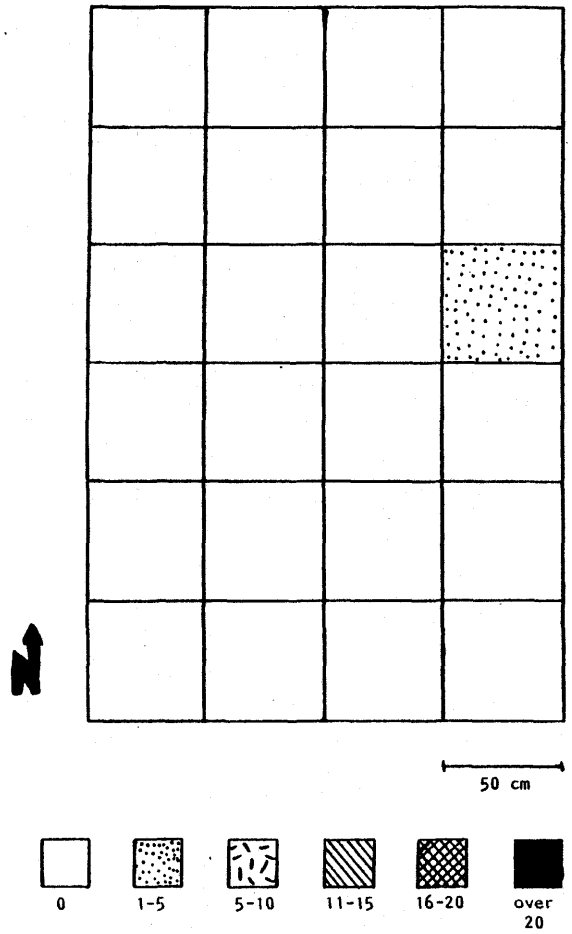


Figure 81: Distribution Density by Number of Unburned Bird Level 5, Area B, EeMw-26.

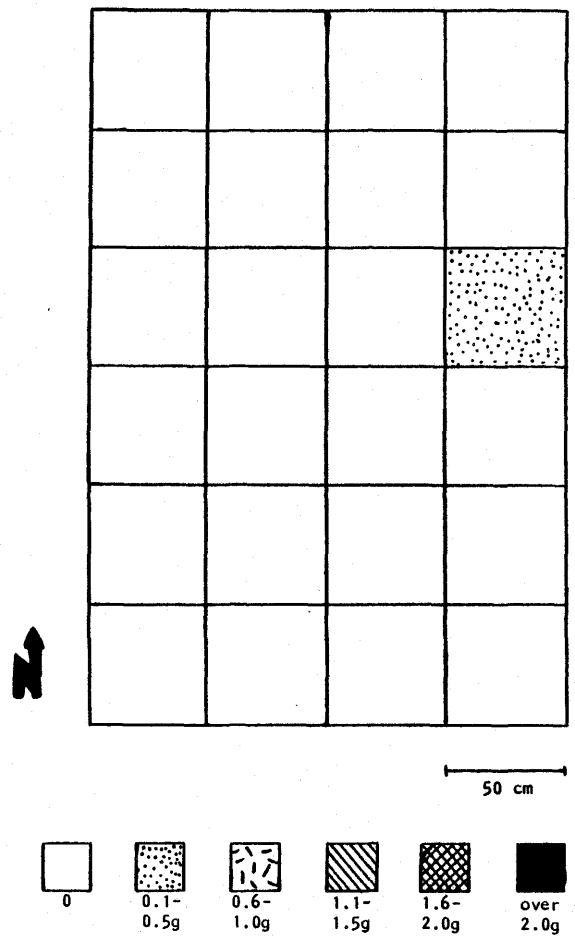


Figure 82: Distribution Density by Weight of Unburned Bird Level 5, Area B, EeMw-26.

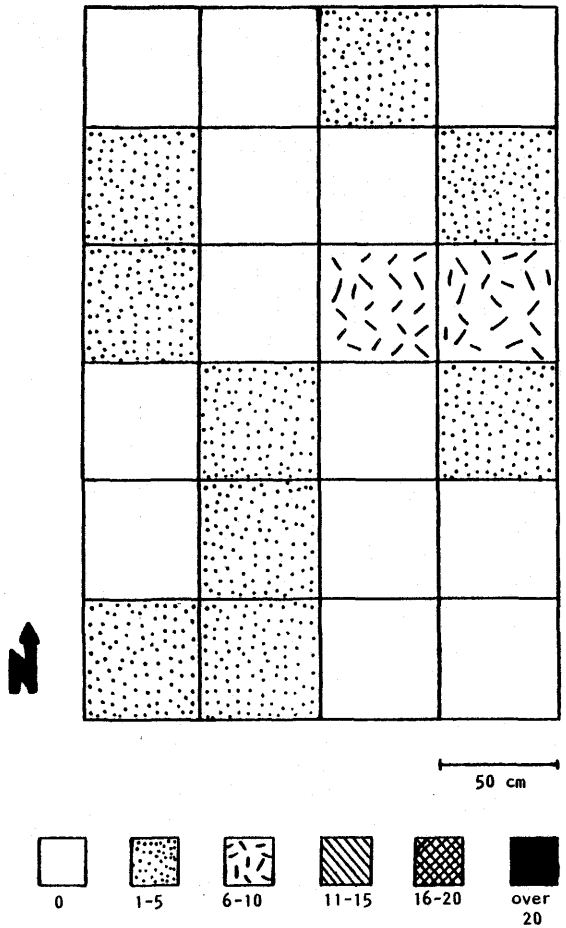


Figure 83: Distribution Density by Number of Unburned and Burned Freshwater Clam Shell Level 5, Area B, EeMw-26.

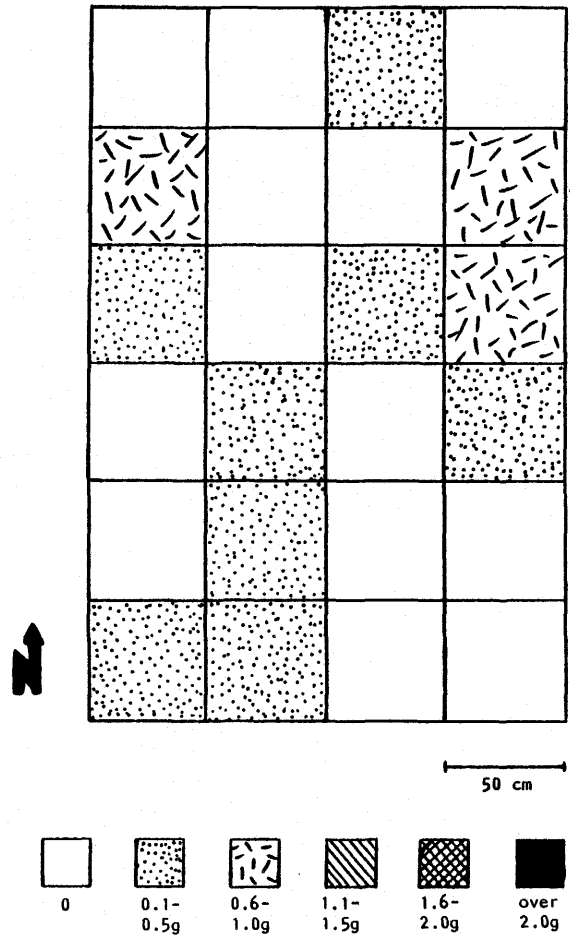


Figure 84: Distribution Density by Weight of Unburned and Burned Freshwater Clam Shell Level 5, Area B, EeMw-26.

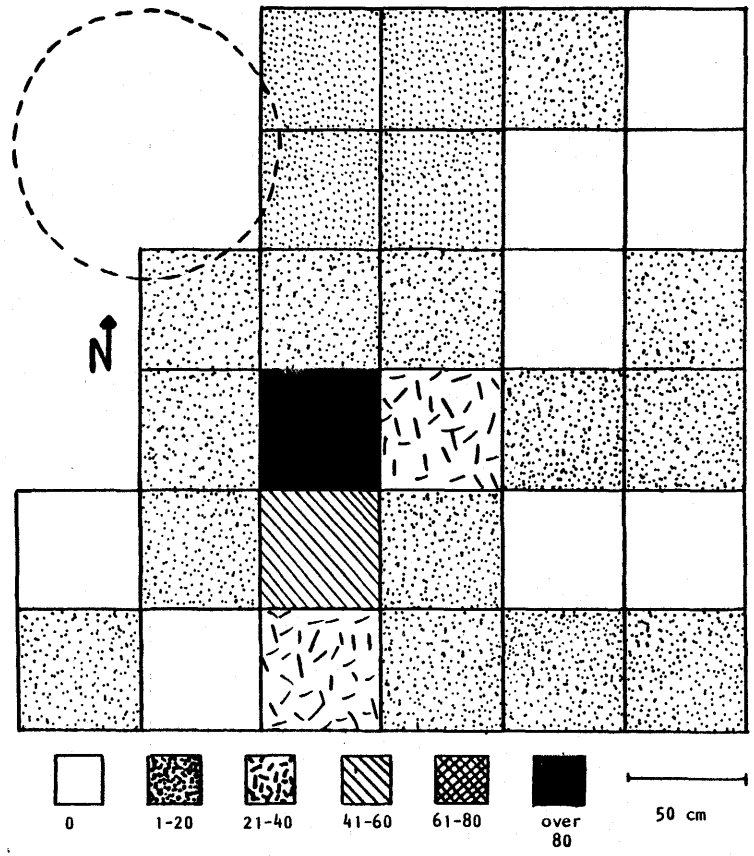


Figure 85: Distribution Density by Number of Burned Mammal Level 4, Sandy Creek, Area A, EeMw-26.

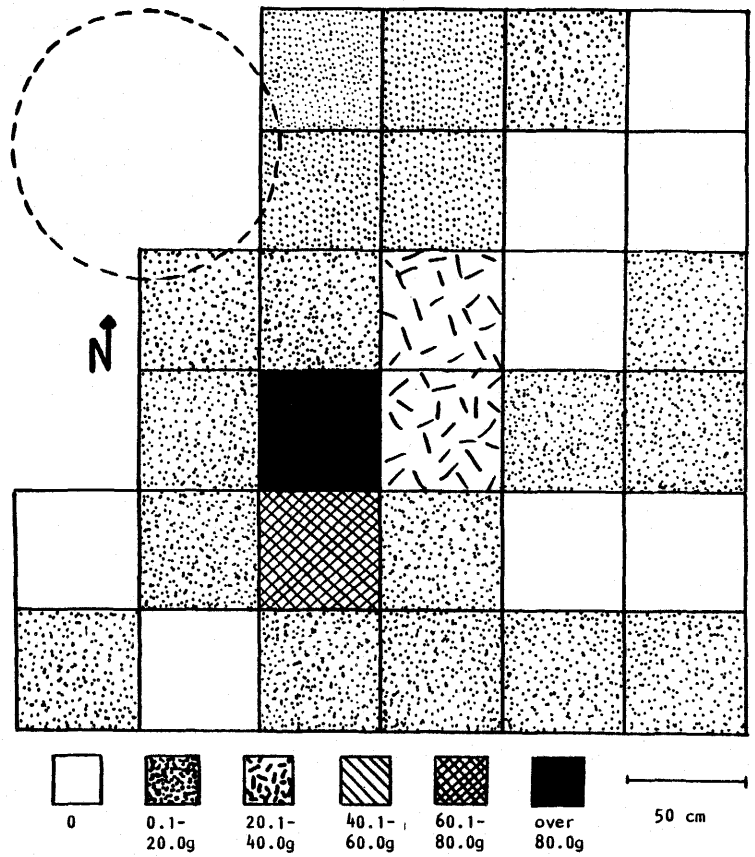


Figure 86: Distribution Density by Weight of Burned Mammal Level 4, Sandy Creek, Area A, EeMw-26.

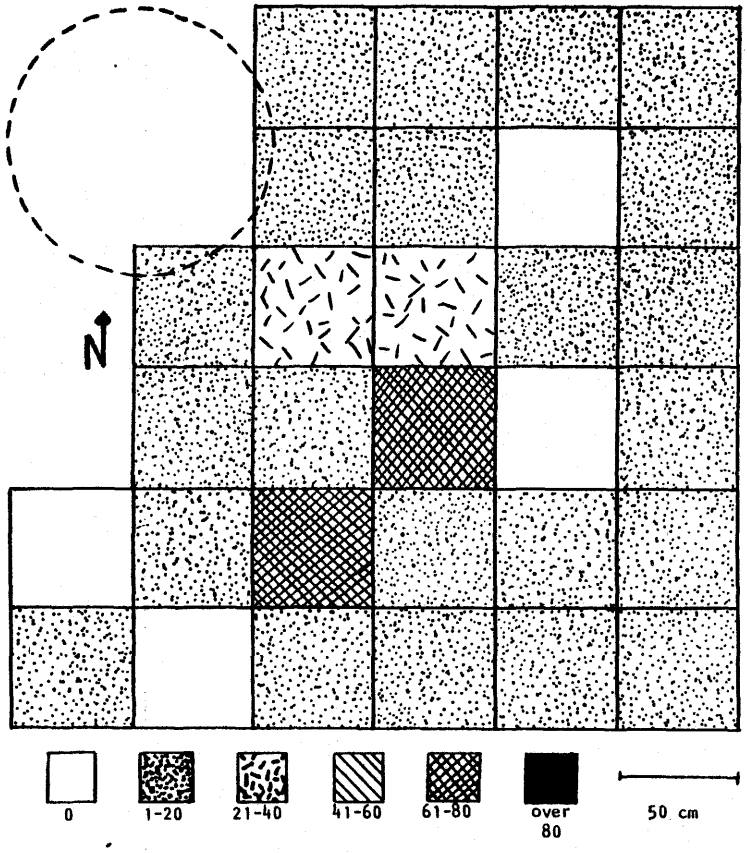


Figure 87: Distribution Density by Number of Unburned Mammal Level 4, Sandy Creek, Area A, EeMw-26.

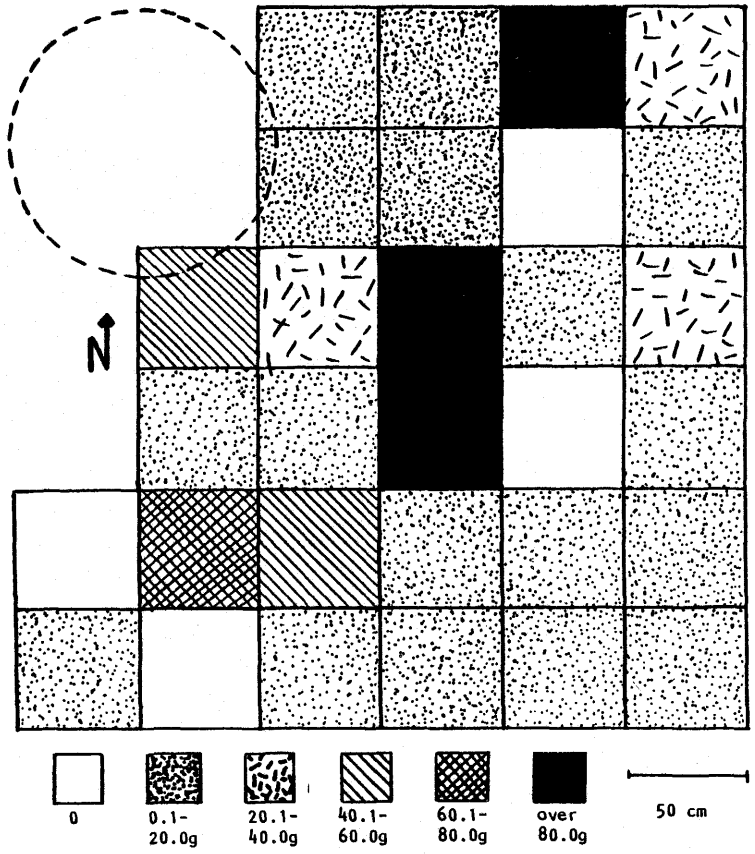


Figure 88: Distribution Density by Weight of Unburned Mammal Level 4, Sandy Creek, Area A, EeMw-26.

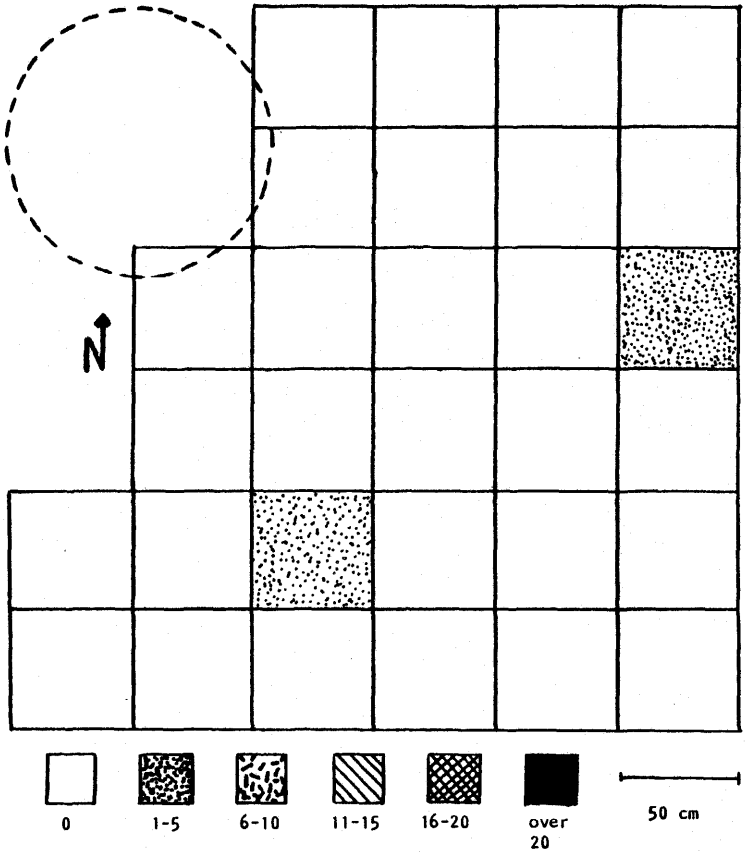


Figure 89: Distribution Density by Number of Burned Fish, Level 4, Sandy Creek, Area A, EeMw-26.

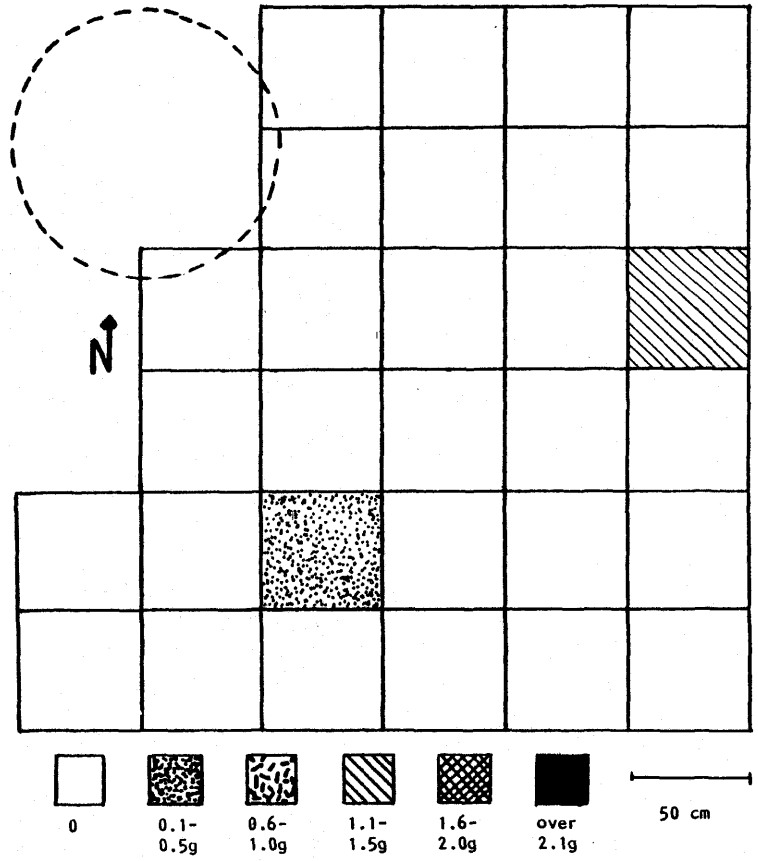


Figure 90: Distribution Density by Weight of Burned Fish, Level 4, Sandy Creek, Area A, EeMw-26.

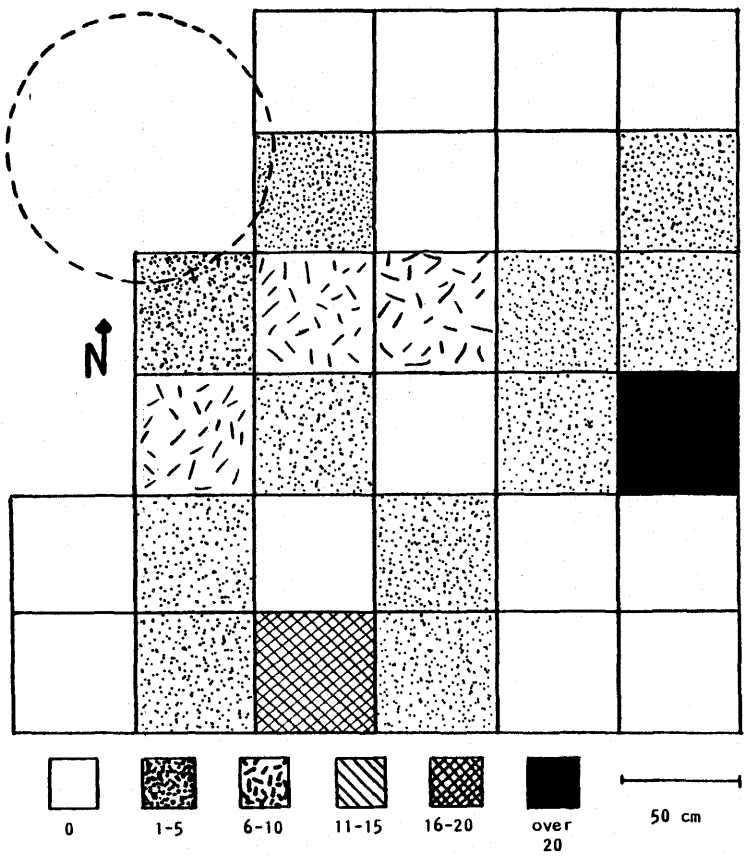


Figure 91: Distribution Density by Number of Unburned Fish Level 4, Sandy Creek, Area A, EeMw-26.

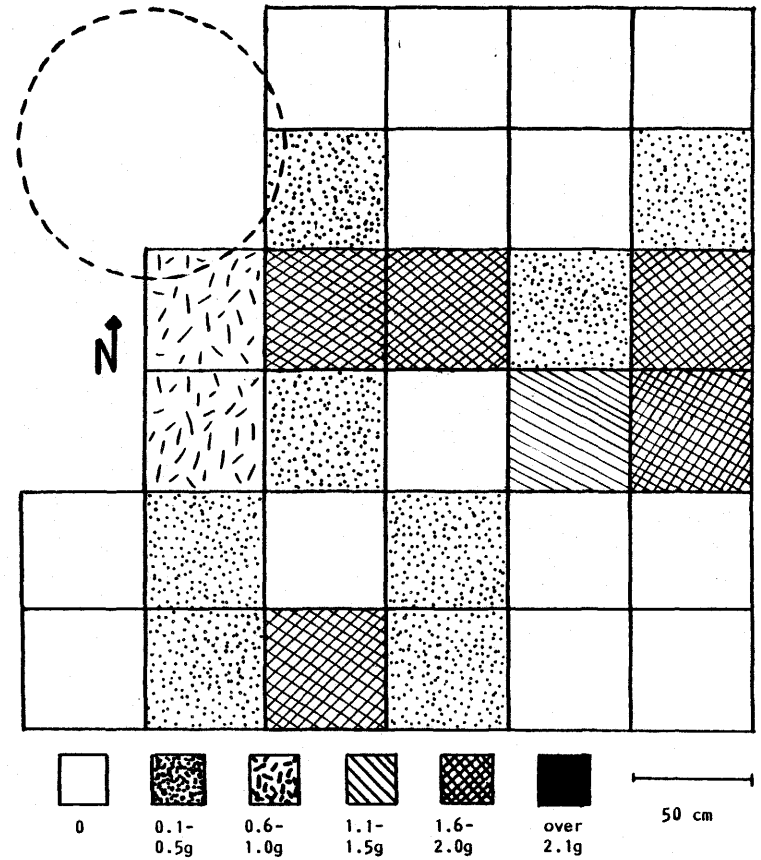


Figure 92: Distribution Density by Weight of Unburned Fish Level 4, Sandy Creek, Area A, EeMw-26.

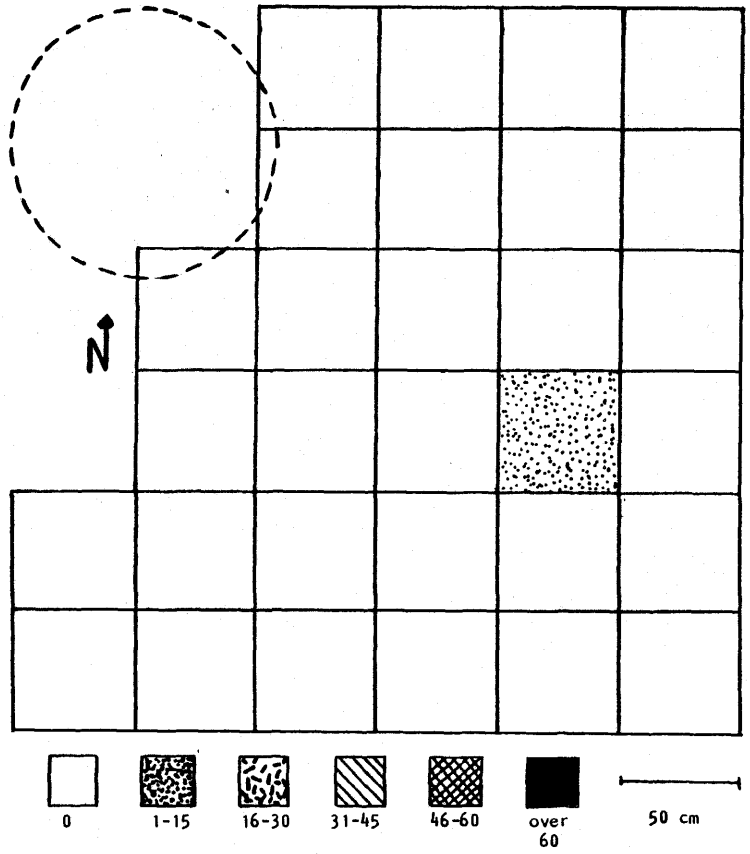


Figure 93: Distribution Density by Number of Burned Bird Level 4, Sandy Creek, Area A, EeMw-26.

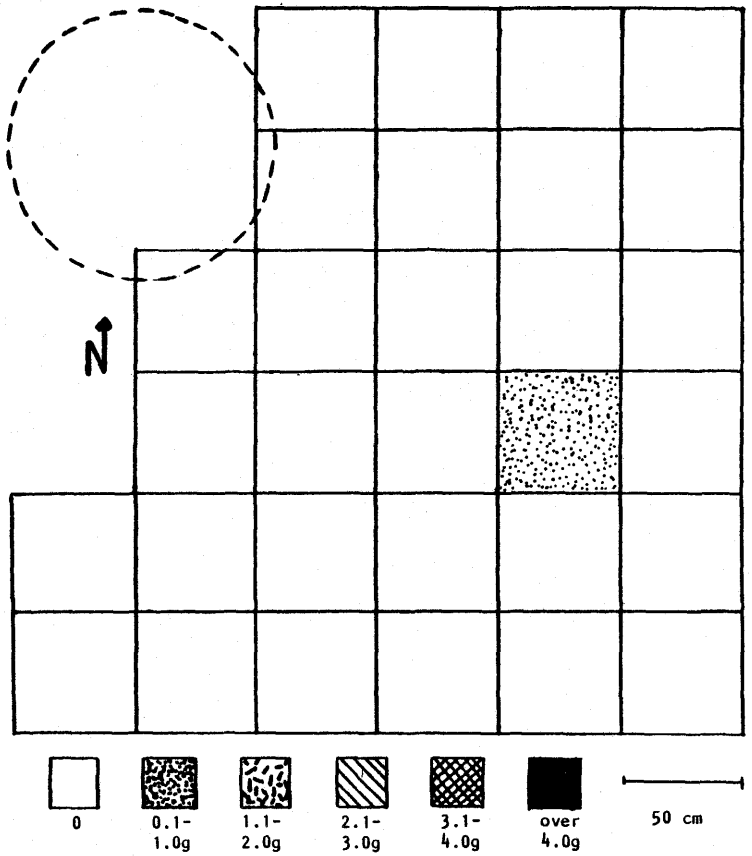


Figure 94: Distribution Density by Weight of Burned Bird Level 4, Sandy Creek, Area A, EeMw-26.

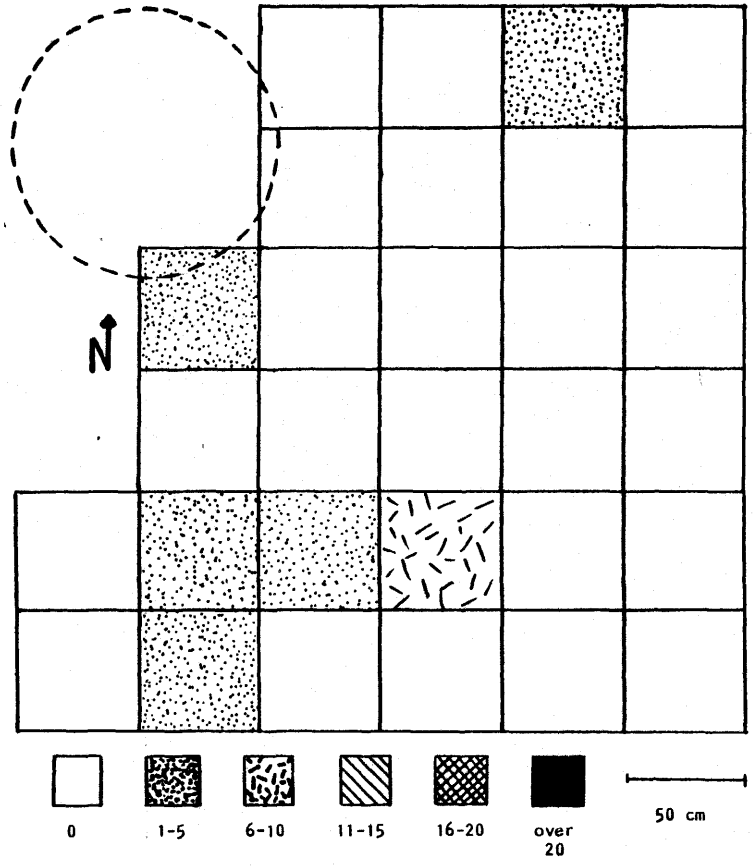


Figure 95: Distribution Density by Number of Unburned and Burned Freshwater Clam Shell Level 4, Sandy Creek, Area A, EeMw-26.

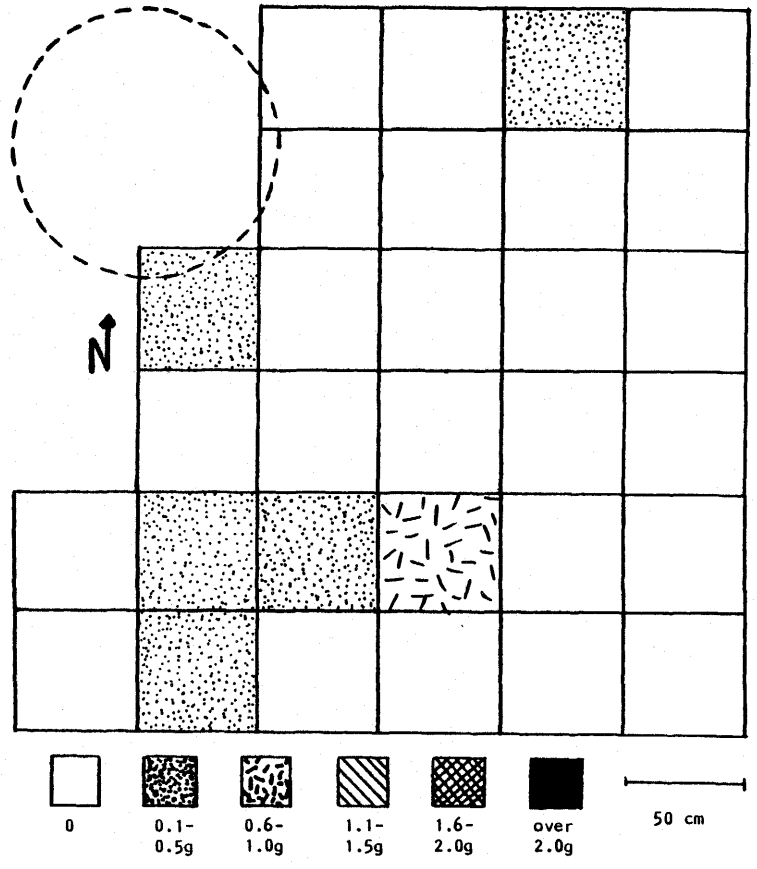


Figure 96: Distribution Density by Weight of Unburned and Burned Freshwater Clam Shell Level 4, Sandy Creek, Area A, EeMw-26.

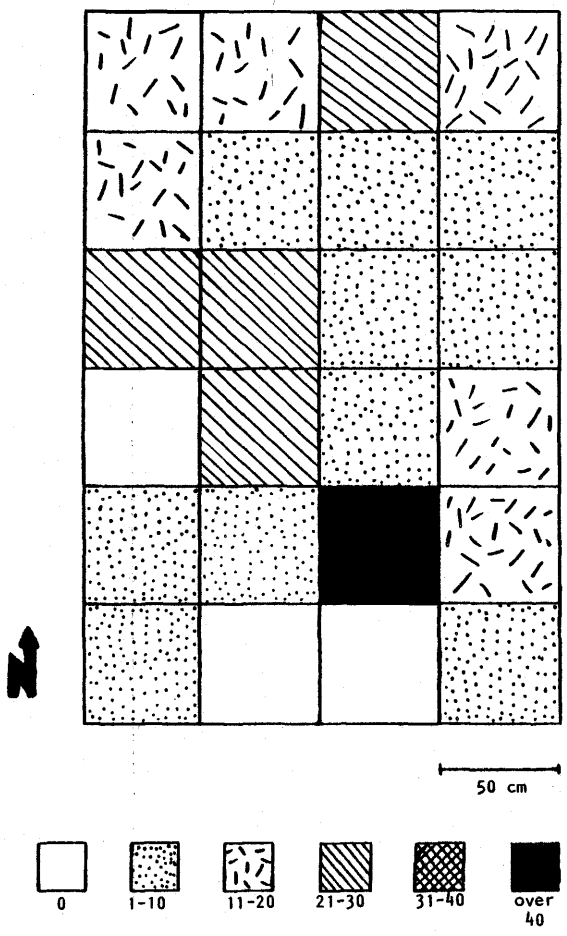


Figure 97: Distribution Density by Number of Burned Mammal Level 6, Sandy Creek, Area B, EeMw-26.

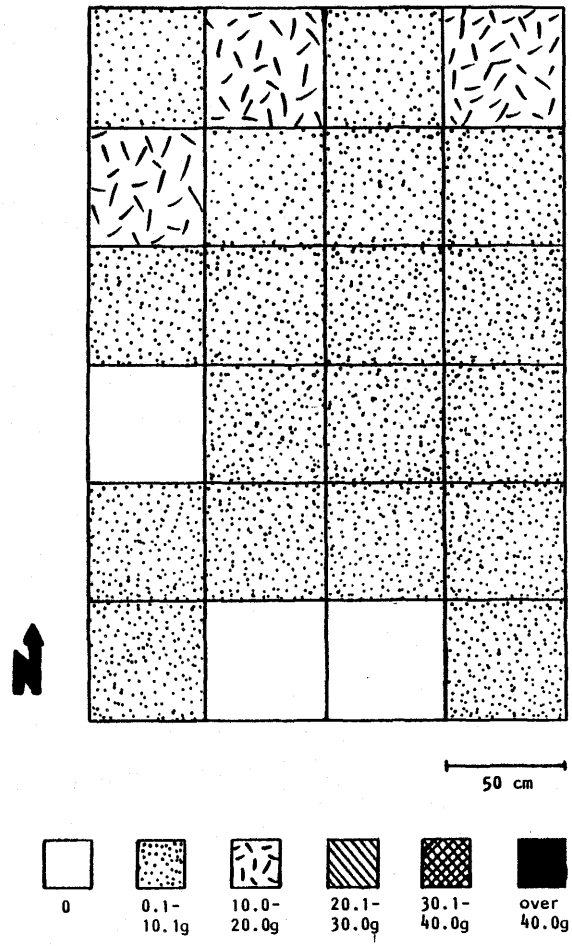


Figure 98: Distribution Density by Weight of Burned Mammal Level 6, Sandy Creek, Area B, EeMw-26.

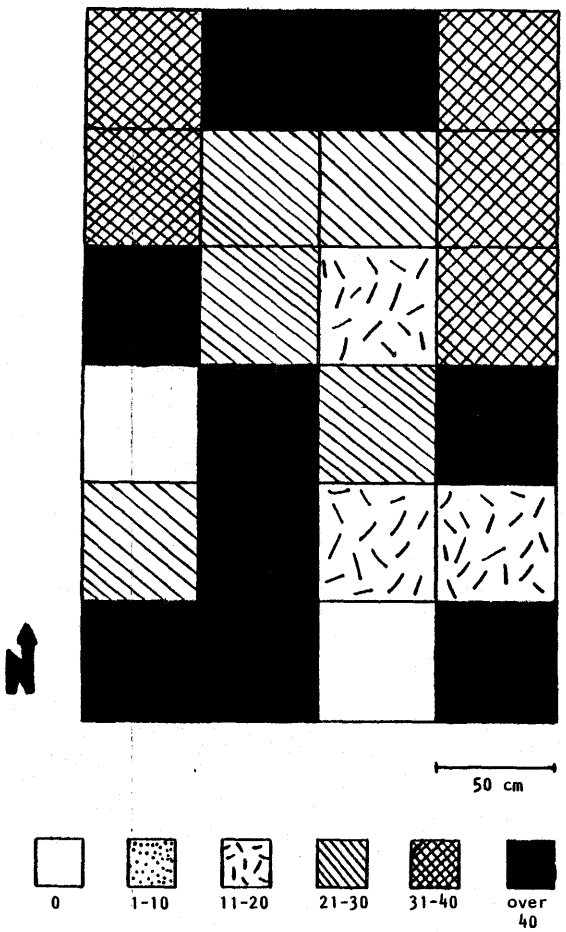


Figure 99: Distribution Density by Number of Unburned Mammal Level 6, Sandy Creek, Area B, EeMw-26.

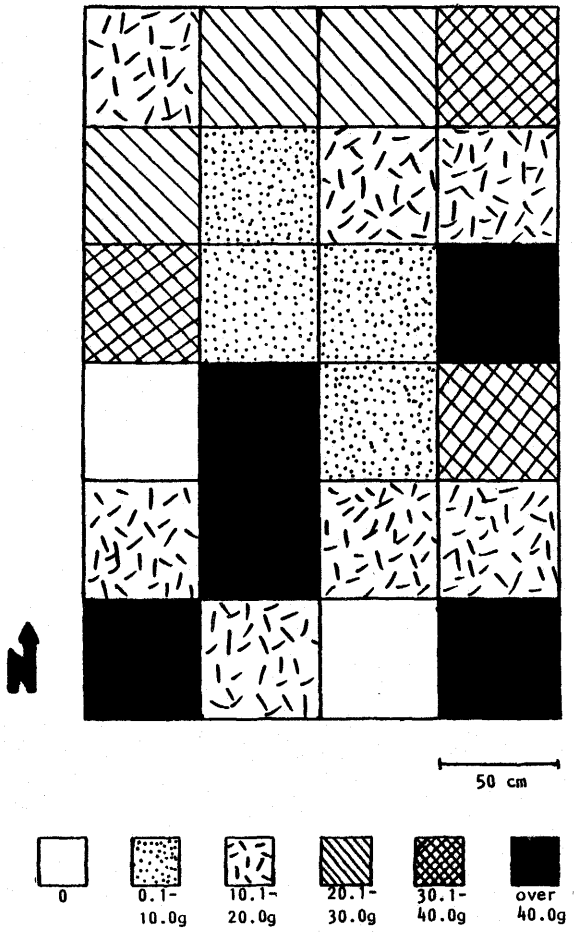


Figure 100: Distribution Density by Weight of Unburned Mammal Level 6, Sandy Creek, Area B, EeMw-26.

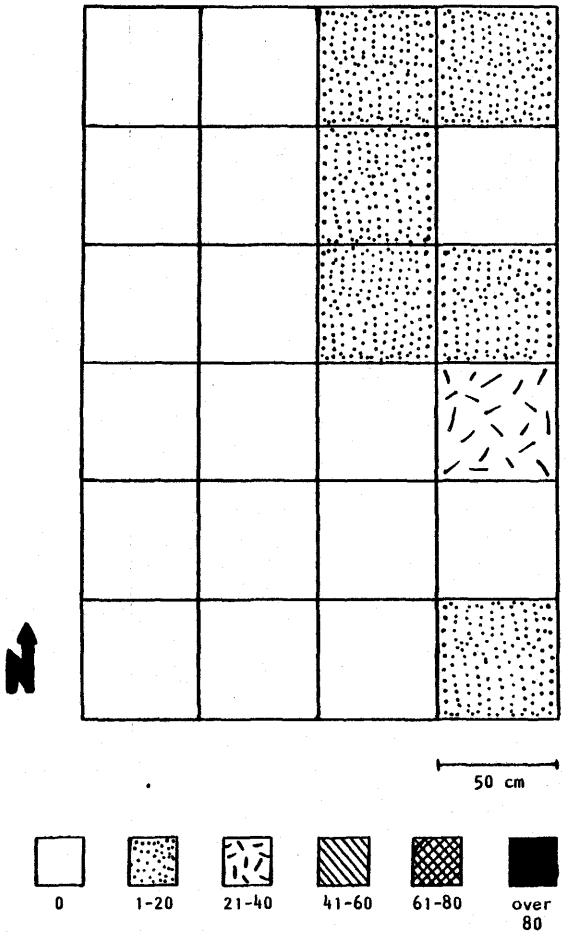


Figure 101: Distribution Density by Number of Burned Fish Level 6, Sandy Creek, Area B, EeMw-26.

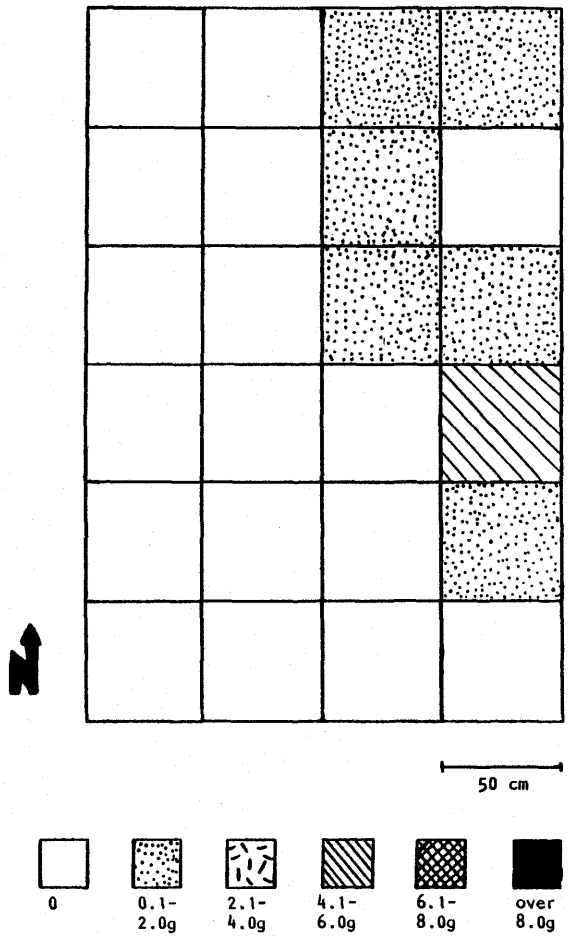


Figure 102: Distribution Density by Weight of Burned Fish Level 6, Sandy Creek, Area B, EeMw-26.

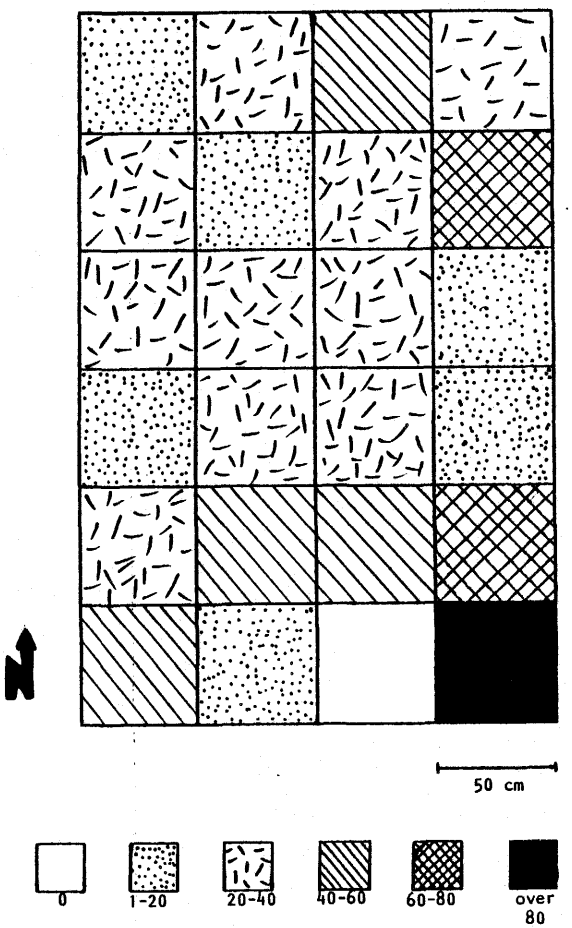


Figure 103: Distribution Density by Number of Unburned Fish Level 6, Sandy Creek, Area B, EeMw-26.

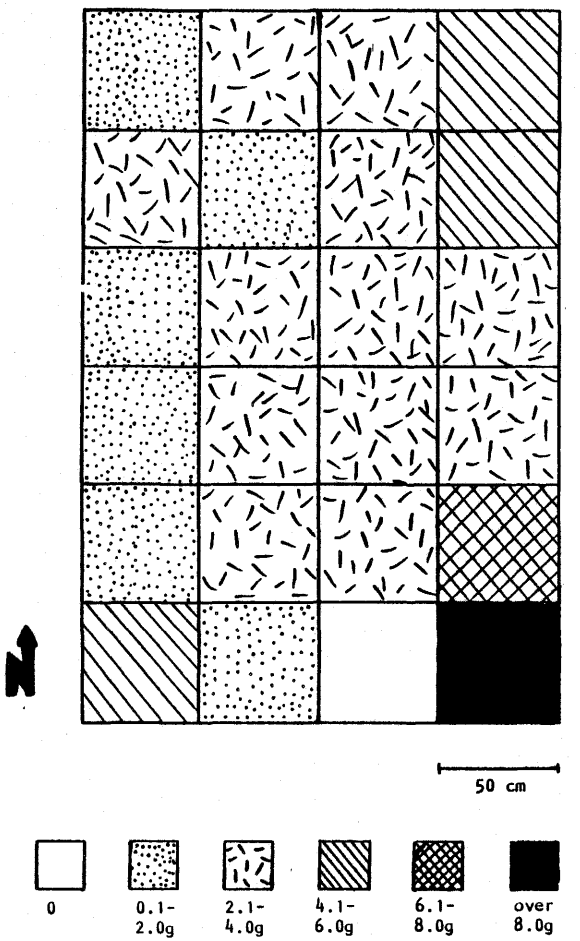


Figure104: Distribution Density by Weight of Unburned Fish Level 6, Sandy Creek, Area B, EeMw-26.

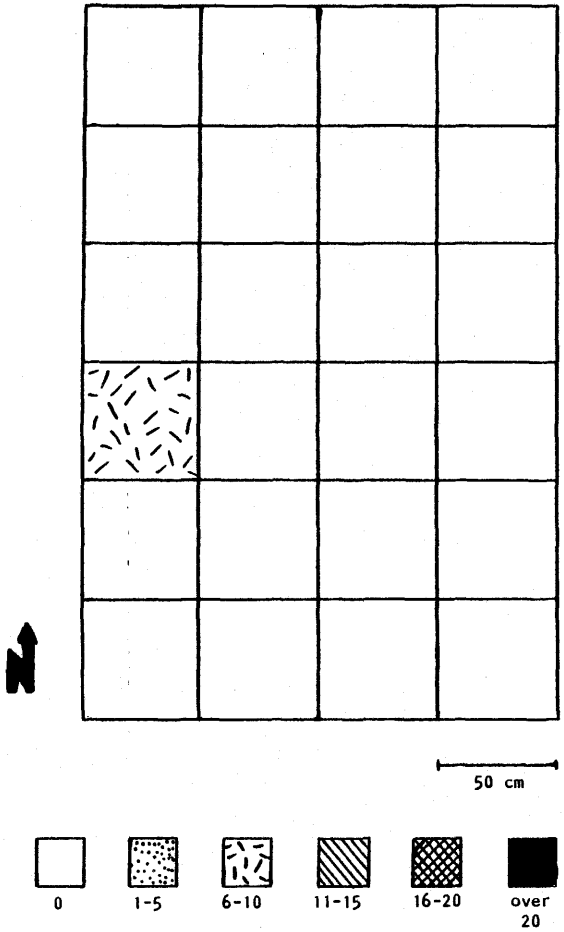


Figure 105: Distribution Density by Number of Burned Bird Level 6, Sandy Creek, Area B, EeMw-26.

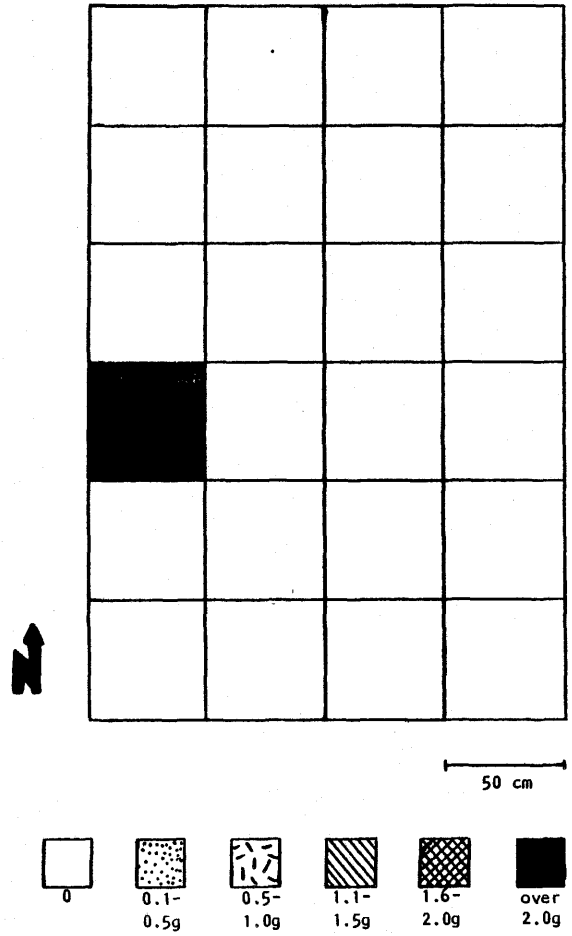


Figure 106: Distribution Density by Weight of Burned Bird Level 6, Sandy Creek, Area B, EeMw-26.

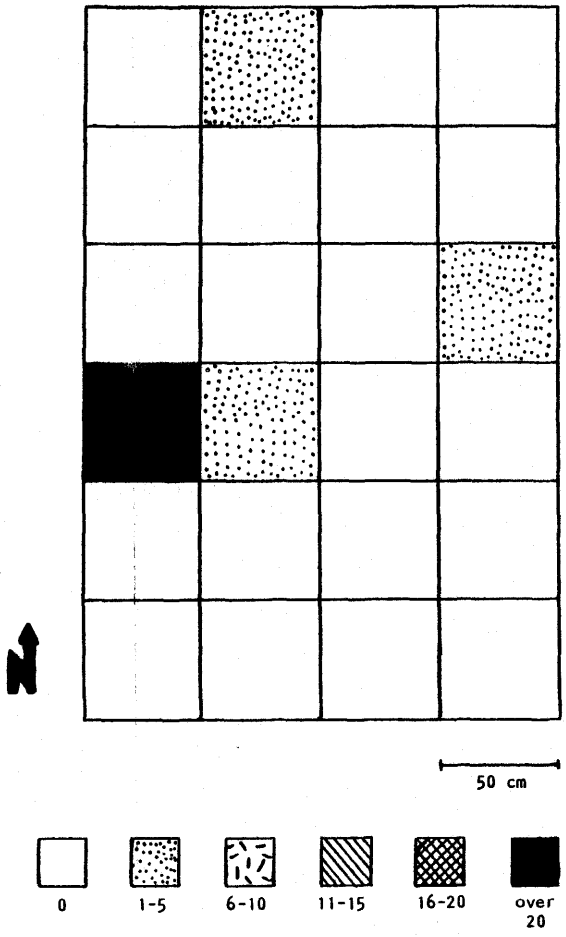


Figure 107: Distribution Density by Number of Unburned Bird Level 6, Sandy Creek, Area B, EeMw-26.

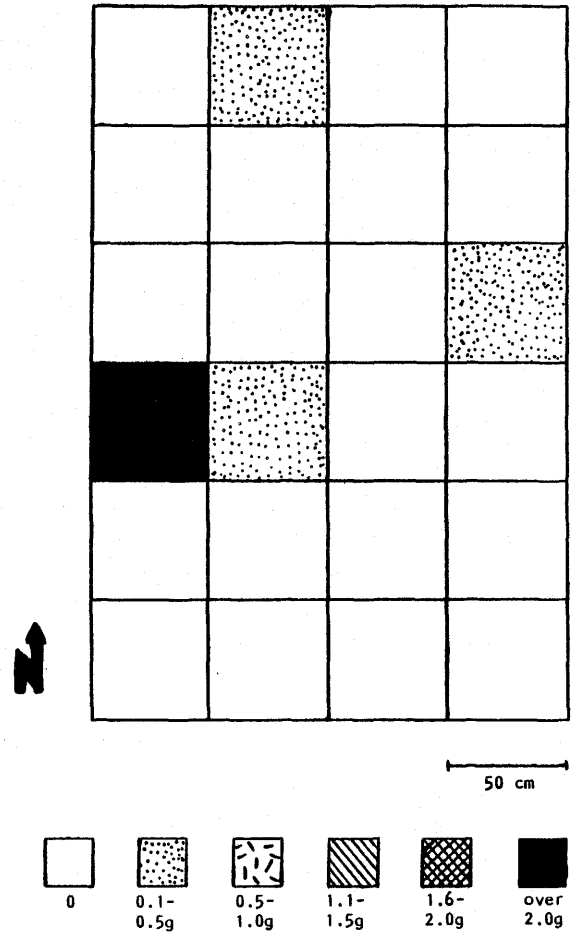


Figure 108: Distribution Density by Weight of Unburned Bird Level 6, Sandy Creek, Area B, EeMw-26.

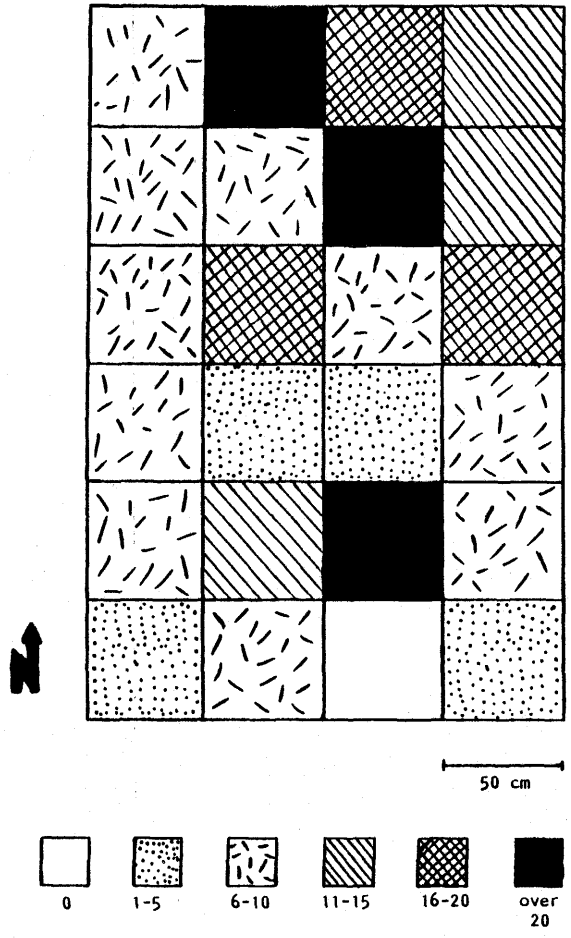


Figure 109: Distribution Density by Number of Unburned and Burned Freshwater Clam Shell Level 6, Sandy Creek, Area B, EeMw-26.

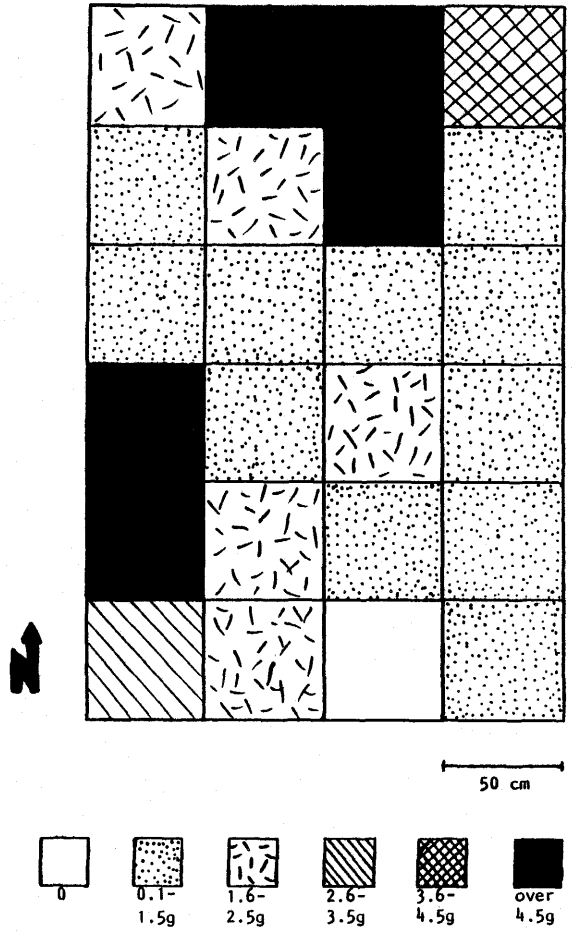


Figure 110: Distribution Density by Weight of Unburned and Burned Freshwater Clam Shell Level 6, Sandy Creek, Area B, EeMw-26.

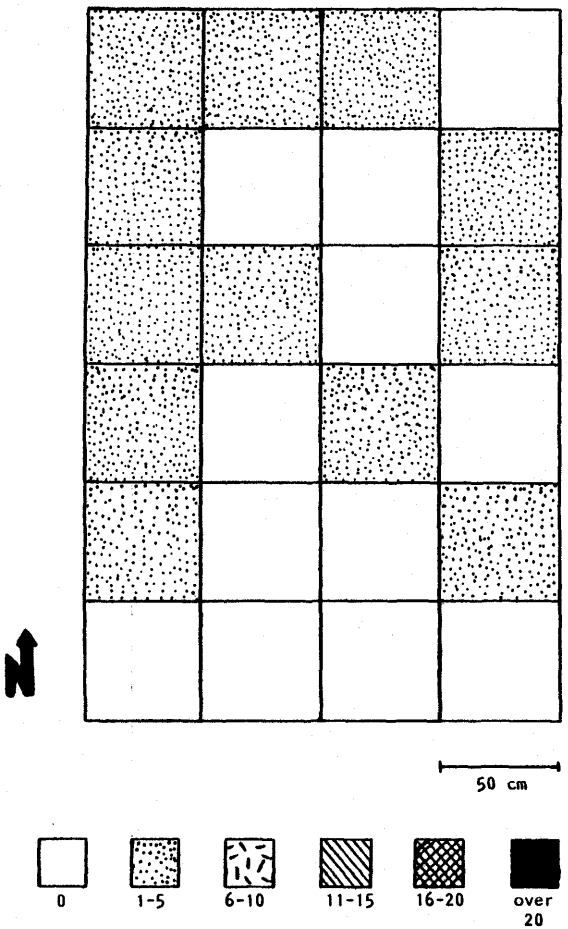


Figure 111: Distribution Density by Number of Burned Mammal Level 7, Area B, EeMw-26.

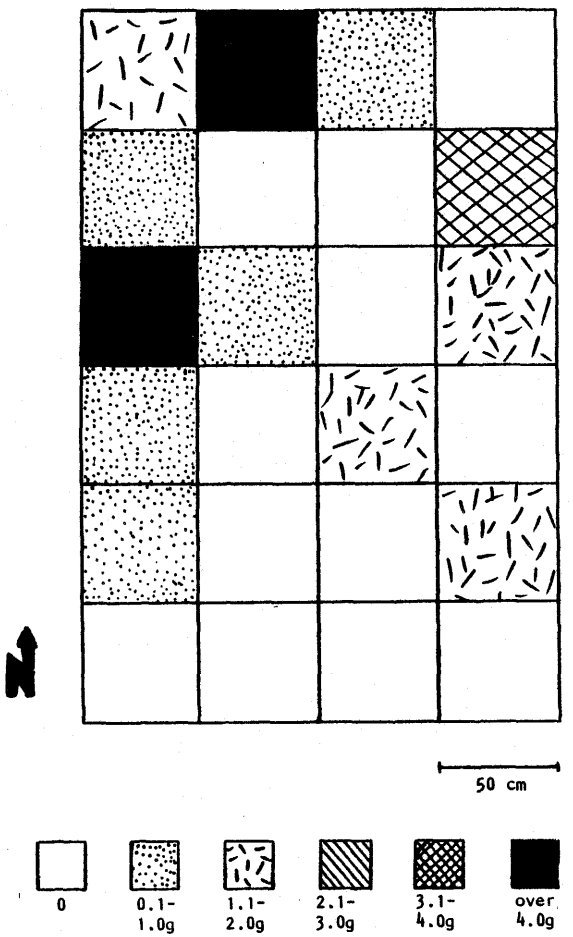


Figure 112: Distribution Density by Weight of Burned Mammal Level 7, Area B, EeMw-26.

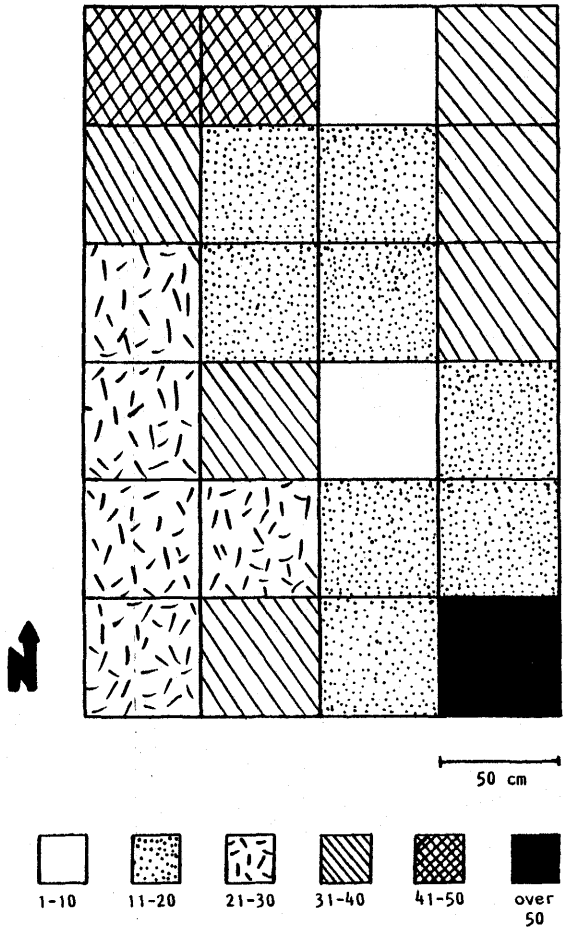


Figure 113: Distribution Density by Number of Unburned Mammal Level 7, Area B, EeMw-26.

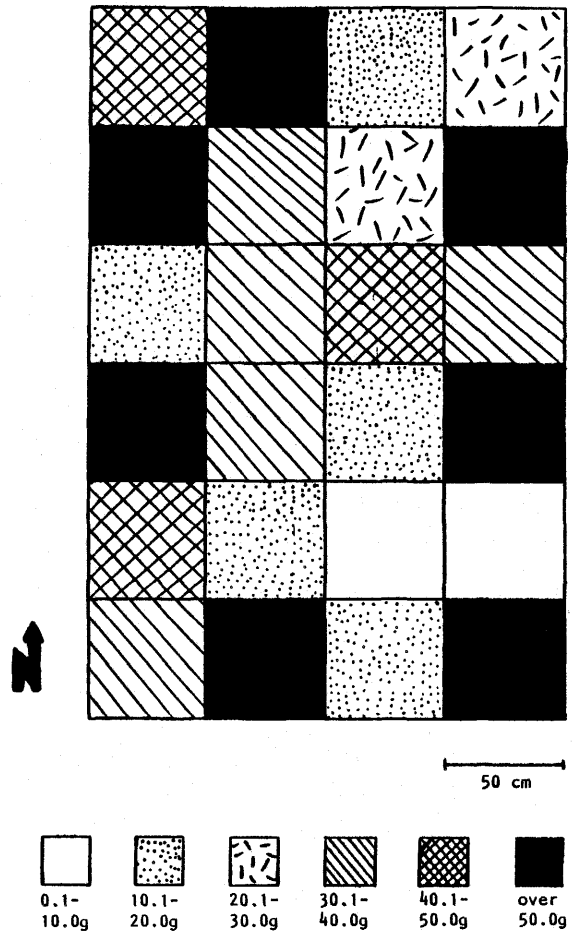


Figure 114: Distribution Density by Weight of Unburned Mammal Level 7, Area B, EeMw-26.

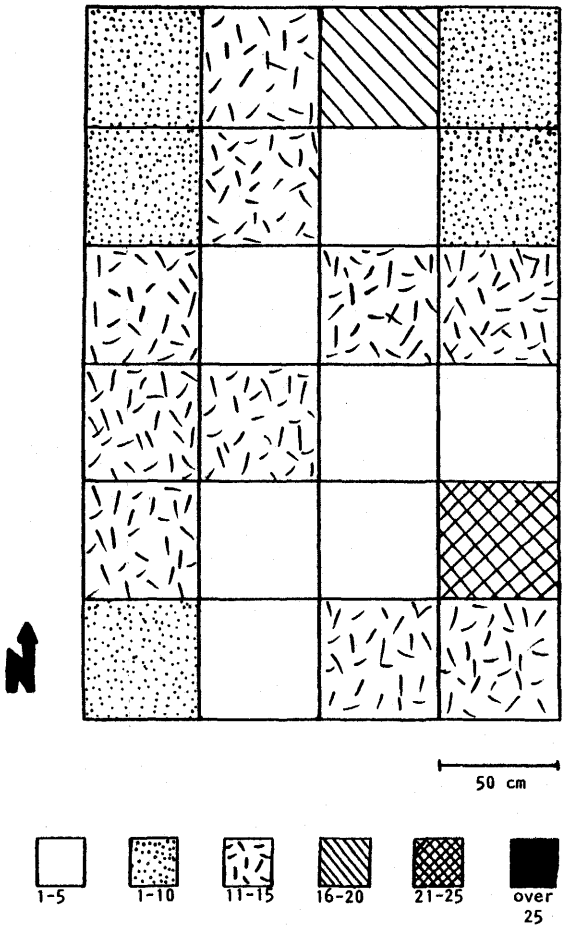


Figure 115: Distribution Density by Number of Unburned Fish Level 7, Area B, EeMw-26.

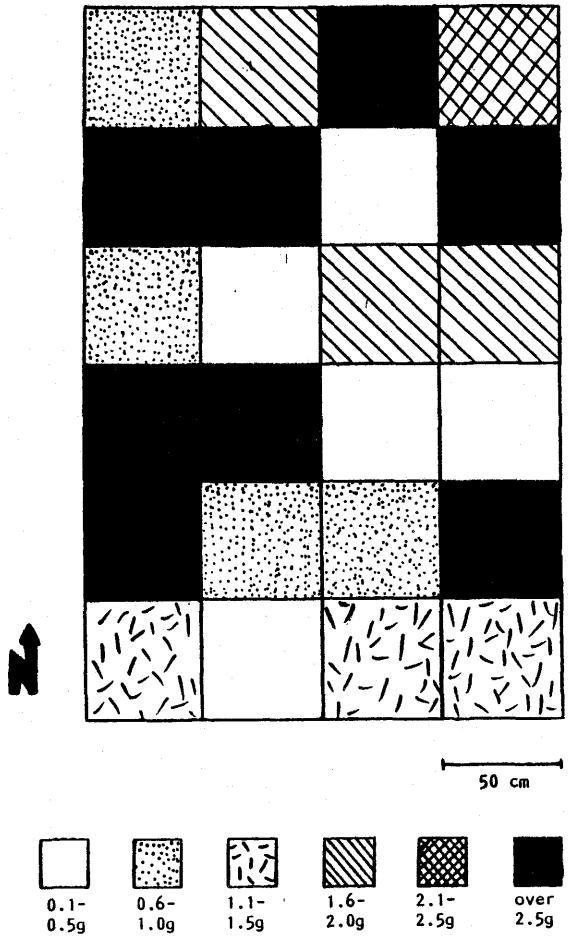


Figure 116: Distribution Density by Weight of Unburned Fish Level 7, Area B, EeMw-26.

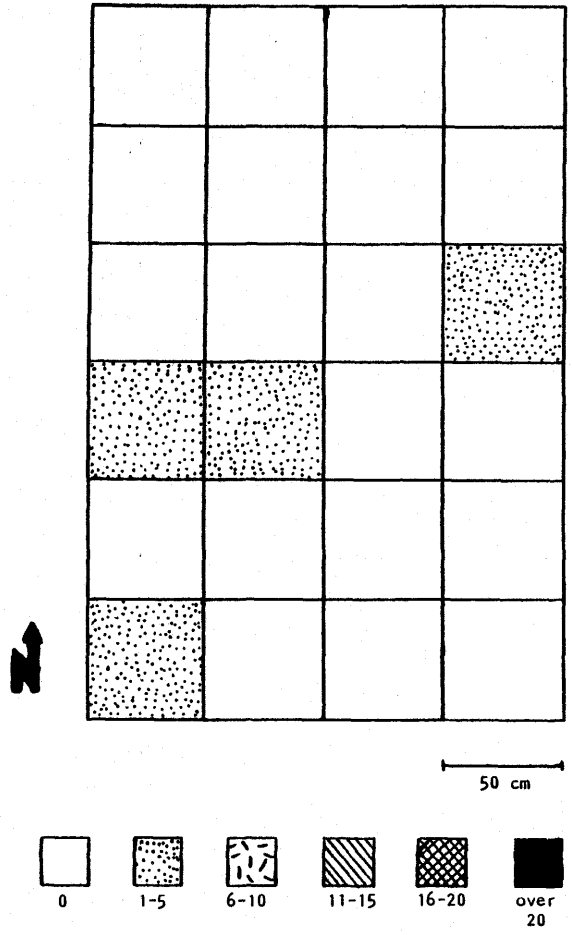


Figure 117: Distribution Density by Number of Unburned Bird Level 7, Area B, EeMw-26.

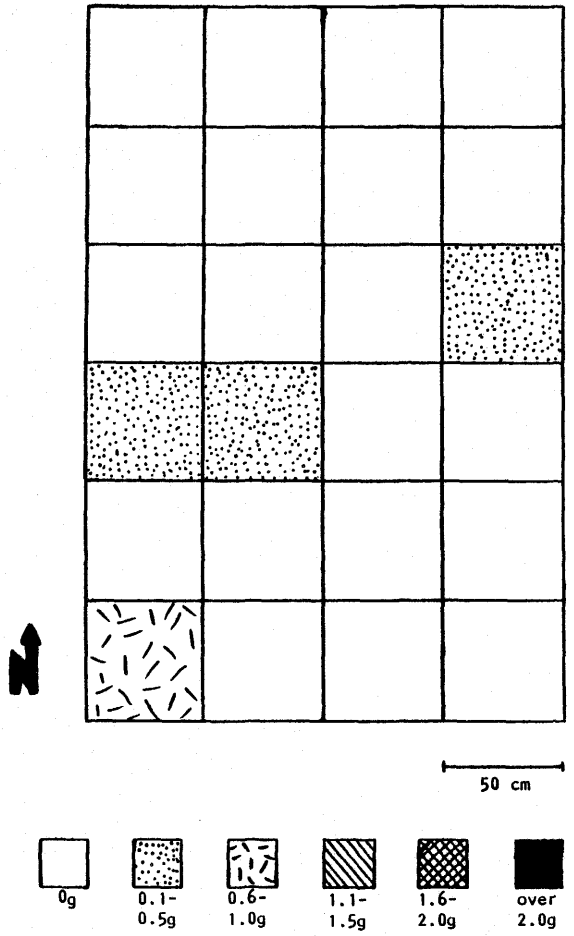


Figure 118: Distribution Density by Weight of Unburned Bird Level 7, Area B, EeMw-26.

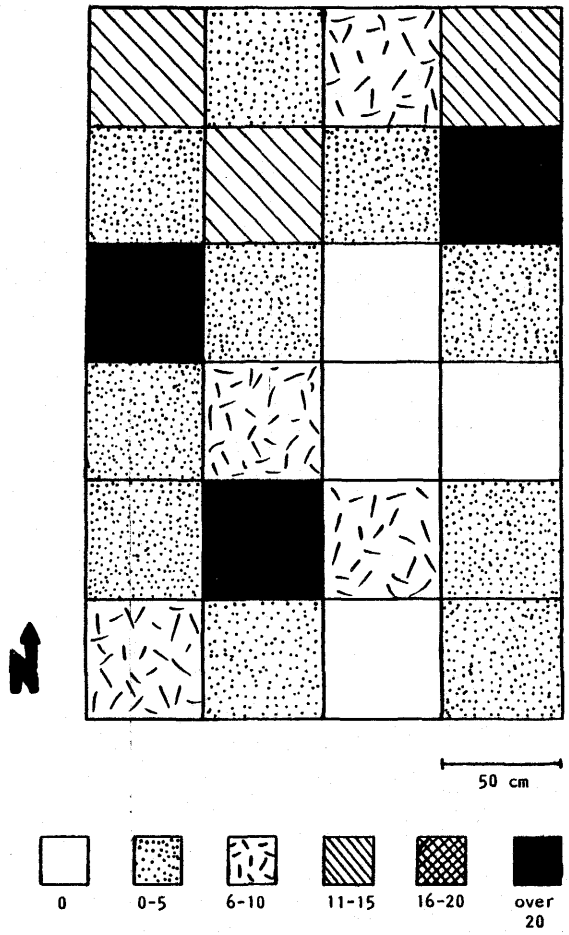


Figure 119: Distribution Density by Number of Unburned and Burned Freshwater Clam Shell, Level 7, Area B, EeMw-26.

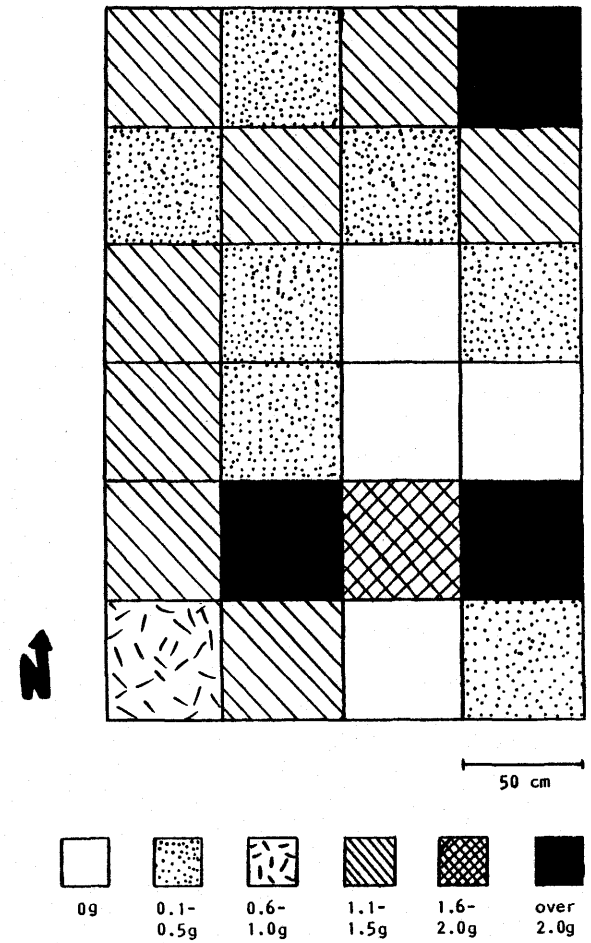


Figure 120: Distribution Density by Weight of Unburned and Burned Freshwater Clam Shell Level 7, Area B, EeMw-26.